SECOND OPERABLE UNIT
REMEDIAL INVESTIGATION REPORT
SYOSSET LANDFILL
SYOSSET, NEW YORK

April 1994

Prepared for

Town of Oyster Bay
Department of Public Works
150 Miller Place
Syosset, New York 11791

Prepared by

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April 28, 1994

Geraghty & Miller, Inc. is submitting this report to the Town of Oyster Bay Department of Public Works for work performed at the Syosset Landfill, Syosset, New York. The report was prepared in conformance with Geraghty & Miller's strict quality assurance/quality control procedures to ensure that the report meets industry standards in terms of the methods used and the information presented. If you have any questions or comments concerning this report, please contact one of the individuals listed below.

Respectfully submitted

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EXECUTIVE SUMMARY

Geraghty & Miller, Inc. was retained by the firm of Lockwood, Kessler & Bartlett, Inc., (LKB), under contract to the Town of Oyster Bay (Town), Syosset, New York, to conduct the Second Operable Unit (OU-2) Remedial Investigation (RI) of the Syosset municipal landfill site (Syosset Landfill) in Syosset, New York. The OU-2 RI focussed on the potential off-site environmental impacts of the Syosset Landfill, whereas the Interim, or First Operable Unit (OU-1) RI focussed on on-site environmental impacts from the Syosset Landfill.

The Syosset Landfill is located in central Nassau County in the Town of Oyster Bay, Syosset, New York. The site is rectangular in shape and encompasses approximately 38 acres. The offices and facilities of the Town of Oyster Bay Department of Public Works are located adjacent to the landfill on the east and occupy approximately 15 acres. The Town controls access to the site, and the entire landfill area is enclosed by a 6-foot high cyclone fence. The site is bounded by the Long Island Expressway and Miller Place to the southeast, Cerro Wire & Cable Corporation to the southwest, and the Long Island Railroad (LIRR) to the northwest. A residential area and the South Grove Elementary School border the site to the northeast. Topographically, the site is relatively flat and at a similar elevation to the surrounding area.

The OU-2 RI was conducted from October 1992 to March 1994 and consisted of an Off-Site Groundwater Study and an Off-Site Subsurface Gas Study. During the OU-1 RI, leachate-impacted groundwater was detected beneath the Syosset Landfill at the northern (downgradient) property boundary and elevated concentrations of methane were detected at the southwestern part of the landfill. The purposes of the Off-Site Groundwater Study were to determine the off-site ex[redacted]eachate plume that may be emanating from the

landfill, confirm the direction of groundwater flow, and determine the plume thickness. The purpose of the Off-Site Subsurface Gas Study was to determine the extent of off-site subsurface gas migration from the landfill.

The scope of work for conducting the Off-Site Groundwater Study and Off-Site Subsurface Gas Study included the following:

- Installation of nine monitoring wells at four locations (three locations off-site [eight wells] and one location on-site [one well]).
- Measurement of water levels in 18 Nassau County observation wells in the vicinity of the Syosset Landfill.
- Performance of two rounds of water-level measurements in site monitoring wells before each of the two groundwater sampling rounds.
- Collection of two rounds of groundwater samples from nine new monitoring wells and 12 preexisting on-site monitoring wells. Samples were analyzed for VOCs, metals (total and dissolved), and leachate indicator parameters.
- Installation of three new off-site subsurface gas monitoring wells.
- Collection of data from the three new off-site and four preexisting on-site gas monitoring wells during 3 days of relatively low or falling barometric pressure.

In addition to the scope of work described above, five new on-site gas monitoring well clusters (two wells per cluster) were installed and monitored as part of the OU-1 Remedial Design Program, which was conducted concurrently with the OU-2 RI.

The Syosset Landfill is underlain by more than 1,000 feet of unconsolidated deposits of sand, silt, gravel, and clay, which rest unconformably on Precambrian bedrock. The unconsolidated deposits are separated into three formations: the Upper Glacial Formation

(top), the Magothy Formation (middle), and the Raritan Formation (bottom). At the Syosset Landfill site, the Magothy Formation is the most significant in terms of potential contaminant migration in groundwater. The Upper Glacial Formation is completely unsaturated (dry) beneath the site; the Lloyd Sand Member of the Raritan Formation is separated from the Magothy Formation by the Raritan Clay, which is approximately 160 feet thick, and, in addition, the Lloyd Sand Member lies at too great a depth to be considered as a potential contaminant migration pathway. Site monitoring wells tap or screen three zones (shallow, intermediate, and deep) of the Magothy Formation. Wells screened in the intermediate zone include on-site "deep" wells installed during the OU-1 RI (and considered intermediate for the purposes of the OU-2 RI) and intermediate wells installed during the OU-2 RI.

Hydrogeologic conditions encountered during the OU-2 RI are generally consistent with the OU-1 RI and published data except that two low-permeability units were encountered in the Magothy Formation that appear to be continuous over the study area. The deepest low-permeability unit appears to have prevented the movement of contaminants into the deep zone except at off-site Well RW-12D. At this location, the unit thins and contaminants have apparently migrated through it. The regional potentiometric surface map of the shallow zone of the Magothy Formation indicates that the position and orientation of the regional groundwater divide is virtually the same as it was during the OU-1 RI and is south of the landfill. Regional shallow groundwater flow was documented to be in a north-northeasterly direction near the site and is also consistent with the OU-1 RI findings. The site-specific horizontal direction of groundwater flow in the shallow, intermediate, and deep zones of the Magothy Formation is generally to the north. However, in the shallow zone on-site, groundwater also flows from the west and east parts of the site toward the center of the landfill before moving north toward the Town park. The direction of the vertical hydraulic gradient is predominately downward in the study area. The vertical hydraulic gradient is approximately four times steeper than the horizontal hydraulic gradient; this is consistent with the proximity of the site to the regional groundwater divide.

Landfill-impacted groundwater has migrated to all three off-site well cluster locations (Recharge Basin, Town park, and Roadway property). The greatest impacts off-site are in the intermediate zone of the Magothy Formation; the only impacts to the deep zone are at the Roadway property. The significantly steeper vertical hydraulic gradient, as compared to the horizontal gradient, has resulted in landfill-derived contaminants moving off-site into the intermediate zone (Wells PK-10I, RB-11I, and RW-12I). The total concentrations of VOCs in off-site intermediate wells at the Town Park (PK-10I) and at the Recharge Basin (RB-11I) are consistent with the total VOC concentrations detected in the on-site shallow monitoring wells. These concentrations are also consistent with regional background degradation of groundwater quality. In particular, this is true for Well RB-11I, which is located outside the easternmost limiting groundwater flowline from the landfill. The total concentration of VOCs in RW-12I is anomalously high, several times higher than in any other monitoring well during either the on-site or off-site RIs. Given the fact that RW-12I is located hydraulically downgradient of the westernmost edge of the landfill, and adjacent to an industrial area located west of the LIRR tracks, the VOCs detected in this well may be derived from a source other than the landfill. The VOCs detected in Well RW-12D are likely derived from the same source as the VOCs detected in Well RW-12I.

Landfill gas (primarily methane) was detected at elevated concentrations in one of the gas wells on the southwestern part of the landfill and is consistent with the findings of the OU-1 RI. Landfill gas was not detected in the three new off-site subsurface gas monitoring wells and does not appear to be migrating off-site. (See Appendix K for the results of gas monitoring conducted separately by LKB as part of the OU-1 Remedial Design Program.)

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1.0 INTRODUCTION

Geraghty & Miller, Inc. was retained by the firm of Lockwood, Kessler & Bartlett, Inc. (LKB), under contract to the Town of Oyster Bay (Town), Syosset, New York, to conduct the Second Operable Unit (OU-2) Remedial Investigation (RI) of the Syosset municipal landfill site (Syosset Landfill) in Syosset, New York (Figure 1-1). The OU-2 RI focussed on the potential off-site environmental impacts of the Syosset Landfill. LKB provided overall project management for the OU-2 RI, and will provide the engineering support necessary to complete the Feasibility Study (FS) portion of the OU-2 Remedial Investigation/Feasibility Study (RI/FS) process for the Syosset Landfill site. The OU-2 RI was performed in accordance with the protocols and methodologies detailed in the Site Operations Plan (SOP) (Geraghty & Miller, Inc. 1992), which was approved by the U.S. Environmental Protection Agency (USEPA) on May 15, 1992. The SOP was developed and prepared in accordance with the OU-2 RI Work Plan (Geraghty & Miller, Inc. 1991) to ensure that the RI would be completed in a manner consistent with the National Contingency Plan (NCP). This OU-2 RI Report describes the activities and findings of the OU-2 RI.

1.1 BACKGROUND

The Interim, or First Operable Unit (OU-1) RI, which was conducted from April 1987 to September 1989, focussed on on-site environmental impacts from the Syosset Landfill. The OU-1 RI Report (Geraghty & Miller, Inc. 1989) contains extensive background information about the site. Therefore, most of that information will not be repeated in this OU-2 RI Report. The FS portion of the OU-1 RI was conducted by LKB. The OU-1 RI/FS was officially completed in September 1990 when the USEPA issued the Record of Decision (ROD) for the site on September 27, 1990.

1.2 SITE DESCRIPTION

The Syosset Landfill is located in central Nassau County in the Town of Oyster Bay, Syosset, New York (Figure 1-1). The site is rectangular in shape and encompasses approximately 38 acres (see Figure 1-2). The offices and facilities of the Town of Oyster Bay Department of Public Works are located adjacent to the landfill on the east and occupy approximately 15 acres. The Town controls access to the site, and the entire landfill area is enclosed by a 6-foot high cyclone fence.

As shown on Figures 1-1 and 1-2, the site is bounded by the Long Island Expressway and Miller Place to the southeast, Cerro Wire & Cable Corporation to the southwest, and the Long Island Railroad (LIRR) to the northwest. A residential area and the South Grove Elementary School border the site to the northeast. Topographically, the site is relatively flat and at a similar elevation to the surrounding area.

Two basins owned by Nassau County border the site to the northeast and the north. Nassau County recharge basin RB-284 borders the site to the northeast and Nassau County storm-water basin SWB-571 borders the site to the north. Another Nassau County storm-water basin, SWB-218, is located about 700 feet northeast of RB-284. Storm-water runoff from the neighboring residential area collects in these basins and then the water either evaporates or recharges the underlying Magothy aquifer.

1.3 PURPOSE AND SCOPE

The OU-2 RI consisted of an Off-Site Groundwater Study and an Off-Site Subsurface Gas Study. During the OU-1 RI, leachate-impacted groundwater was detected beneath the Syosset Landfill at the northern (downgradient) property boundary and elevated concentrations of methane were detected at the southwestern part of the landfill. The purposes of the Off-Site Groundwater Study were to determine the off-site extent of a leachate plume that may be emanating from the landfill, confirm the direction of

groundwater flow, and determine the plume thickness. The purpose of the Off-Site Subsurface Gas Study was to determine the extent of off-site subsurface gas migration from the landfill.

The scope of work for conducting the Off-Site Groundwater Study and Off-Site Subsurface Gas Study included the following:

- Installation of nine monitoring wells at four locations (three locations off-site [eight wells] and one location on-site [one well]).
- Measurement of water levels in 18 Nassau County observation wells in the vicinity of the Syosset Landfill.
- Performance of two rounds of water-level measurements in site monitoring wells before each of the two groundwater sampling rounds.
- Collection of two rounds of groundwater samples from nine new monitoring wells and 12 preexisting on-site monitoring wells. Samples were analyzed for VOCs, metals (total and dissolved), and leachate indicator parameters.
- Installation of three new off-site subsurface gas monitoring wells.
- Collection of data from three new gas monitoring wells during 3 days of relatively low or falling barometric pressure.

In addition to the scope of work described above, five new on-site gas monitoring well clusters (two wells per cluster) were installed and monitored as part of the OU-1 Remedial Design Program, which was conducted concurrently with the OU-2 RI.

1.4 OVERVIEW OF SITE CONDITIONS

As previously stated, the OU-1 (Interim) RI was conducted to evaluate the on-site environmental impacts of the Syosset Landfill. The OU-1 RI consisted of three separate studies: the On-Site Groundwater Study, the Landfill Dimension Study, and the Subsurface Gas Study (on-site). Field work for the OU-1 RI began in April 1987 and was completed in June 1988; thereafter, landfill gas and water levels were monitored on a monthly basis until September 1989. The overall scope of work for the OU-1 RI consisted of the following field activities:

- Installation of nine groundwater monitoring wells to supplement six preexisting groundwater monitoring wells.
- Installation of 19 gas monitoring wells.
- Drilling of four borings through the fill.
- Collection and analysis of fill samples.
- Collection and analysis of groundwater samples.
- Collection and analysis of landfill gas samples.
- Pressure testing of gas monitoring wells.
- Monthly monitoring of landfill gas and groundwater levels.

The findings of the OU-1 RI are summarized below.

The Syosset Landfill is underlain by more than 1,000 feet of unconsolidated deposits of sand, silt, gravel, and clay, which rest unconformably on Precambrian bedrock. The unconsolidated deposits are separated into three formations: the Upper Glacial Formation (top), the Magothy Formation (middle), and the Raritan Formation (bottom). At the Syosset Landfill site, the Magothy aquifer is the most significant in terms of potential contaminant migration in groundwater. The Upper Glacial Formation is completely

unsaturated (dry) beneath the site; the Lloyd Sand Member of the Raritan Formation is separated from the Magothy aquifer by the Raritan Clay, which is approximately 160 feet thick, and, in addition, the Lloyd Sand Member lies at too great a depth to be considered as a potential contaminant migration pathway.

Water-level measurements were collected during the OU-1 RI on a regular basis in both on-site monitoring wells (installed under the direction of ERM and Geraghty & Miller) and off-site Nassau County monitoring wells. These data were used to prepare potentiometric surface maps that depicted the horizontal direction of groundwater flow regionally in the shallow zone of the Magothy aquifer and on-site in the shallow and "deep" zones of the Magothy aquifer. (These "deep" monitoring wells are considered intermediate depth monitoring wells for the purposes of the OU-2 RI.) As indicated on these maps, the dominant horizontal component of shallow groundwater flow was in a northeasterly direction in the Magothy aquifer at and in the vicinity of the site (with a more northerly groundwater flow direction in the "deep" zone at the site), and the regional groundwater divide was located south of the site. A comparison of the horizontal and vertical hydraulic gradients indicated that the vertical gradient is more pronounced than the horizontal gradient, thus confirming that the site is in a deep-flow recharge zone.

During the OU-1 RI, groundwater quality underneath and at the downgradient edge of the landfill was found to be impacted by leachate, as evidenced by elevated concentrations of indicator parameters (chloride, ammonia, alkalinity, hardness, total dissolved solids [TDS], specific conductance, iron, and ammonia). The concentrations and distribution of the leachate indicator parameters suggested the existence of an off-site plume of leachate-impacted groundwater. Although volatile organic compounds (VOCs) were detected in some groundwater monitoring wells, the concentrations were within a range detected in monitoring wells screened at similar depths in the Magothy Formation in other areas of Nassau County (Dvirka and Bartilucci Consulting Engineers 1986). Further, the distribution of VOCs was not consistent with a contiguous body (plume) of groundwater contamination with the landfill as the source.

The landfill consists of approximately 38 acres and appears to be divided into two lobes with the deepest lobe located in the western part of the site (with a maximum thickness of 90 feet) and the other lobe near the eastern part of the site (with a maximum thickness of 70 feet). These depths represent the most current information available and were determined during the OU-1 Remedial Design Program (Converse Consultants East, PC 1993). Detectable concentrations of VOCs, base/neutral extractable compounds, polychlorinated biphenyls (PCBs), and metals were found during the OU-1 RI in some samples of fill in a distribution indicative of random disposition of industrial, commercial, and residential waste.

The only available data on waste deposition at the site is provided in the ERM Northeast Report (ERM 1983). According to ERM (1983), from 1933 to 1967, the Syosset Landfill accepted the following types of waste: commercial, industrial, residential, demolition, agricultural, sludge, and ash. After 1967, the site accepted only industrial and scavenger cesspool waste until the site closed in 1975.

During the OU-1 RI, the concentrations of landfill gas were found to be consistently highest in the gas monitoring wells located along the long axis of the landfill and in the southwestern corner of the site. Landfill gas concentrations were lower in wells located along the northern, eastern, and southern boundaries of the site; frequently, concentrations of landfill gas were undetectable, or nearly so, at these boundary areas. Landfill gases did not appear to be migrating vertically upwards under significant (detectable) pressure and appeared to be limited in horizontal extent. VOCs were detected in samples of landfill gas, but not in consistent concentrations or distributions.

2.0 METHODOLOGY

In this section, the methodologies employed for conducting the Off-Site Groundwater Study and Off-Site Subsurface Gas Study are discussed. These methods were described in detail in the SOP (Geraghty & Miller 1992). Any variances from the SOP are discussed.

2.1 OFF-SITE GROUNDWATER STUDY

The Off-Site Groundwater Study was conducted to determine the off-site extent of a leachate plume that may be emanating from the landfill, confirm the direction of groundwater flow, and determine the plume thickness. During the off-site groundwater study, nine new monitoring wells were installed and two rounds of groundwater quality samples were collected from the nine new wells and from 12 of the 15 preexisting on-site wells.

Prior to commencing the drilling program, Delta constructed a decontamination (decon) pad near the center of the landfill. The decon pad was constructed of poured concrete with a sloped surface that funnelled water to a drain. Drilling rigs and down-hole equipment (including drill casings and surface casings) were steam cleaned over the pad before and after drilling at each location. The drillers also staged supplies and equipment that was not being used near the decon pad and surrounded the area with a 3-foot high wire mesh fence.

Drill cuttings from each of the four drilling locations were disposed of at a designated location on-site. Disposal details are provided in Sections 2.1.1.1 (Air-Rotary Barber Method), 2.1.1.2 (Modified Mud-Rotary Method), and 2.1.1.3 (Hollow-Stem Auger Method).

The nine monitoring wells were installed at four locations by Delta Well & Pump Company, Inc. (Delta) of Ronkonkoma, New York, and their subcontractor, Catoh Inc. (Catoh) of Weedsport, New York. Eight of the wells (PK-10S, PK-10I, PK-10D, RB-11S,

RB-11I, RB-11D, RW-12I, and RW-12D) were installed at three off-site locations and one well (SY-3DD) was installed at an on-site location. The locations of the nine new and 15 preexisting monitoring wells are shown on Figure 1-2. A Geraghty & Miller field hydrogeologist was present during all drilling activities to ensure that the protocols specified in the SOP were followed. The field hydrogeologist's responsibilities included collecting and logging soil samples, monitoring drilling and decontamination operations, recording groundwater data, deciding on final drilling depths and screen intervals (in consultation with the Geraghty & Miller project manager and director, the USEPA, the Town, and LKB), preparing boring logs and well completion diagrams, and recording well installation procedures. The USEPA provided oversight at key points during the drilling program (e.g., steam cleaning, geophysical logging, setting the well) through their consultant Camp, Dresser & McKee, Inc. (CDM).

The SOP specified that 11 monitoring wells would be installed at five locations: two on-site locations (near Well Clusters SY-3 and SY-6) and three off-site locations (Nassau County Recharge Basin No. SWB-218, the Town Park, and Roadway Express, Inc. [Roadway]). At the on-site locations, a deep well was to be installed next to each of the two existing on-site monitoring wells; and three new wells (shallow, intermediate, and deep) were to be installed at each off-site location. However, during a meeting held on February 18, 1993 with the USEPA, the Town, LKB, and Geraghty & Miller, it was agreed that two of the 11 monitoring wells would be deleted from the drilling program. The two wells to be deleted were the shallow well proposed at the Roadway property (RW-12S) and the deep upgradient well proposed adjacent to existing Monitoring Well Cluster SY-6 (SY-6DD). The reasons for these deletions are given below.

Monitoring Well RW-12S was deleted from the drilling program at the suggestion of the USEPA with the concurrence of the Town, LKB, and Geraghty & Miller. This decision was made during the February 18, 1993 meeting based on a review of the OU-1 RI potentiometric surface maps which indicated that the groundwater flow direction was more easterly in the shallow zone of the Magothy than the flow direction observed in the

"deep" zone of the Magothy aquifer. Therefore, the consensus at the meeting was that a shallow well was not needed at this location (Roadway). Monitoring Well SY-6DD was deleted from the drilling program because the analytical results of the groundwater samples collected for leachate indicator testing during the drilling of Exploratory Boring SY-3DD indicated that the highest leachate concentrations were detected at a depth that correlates with the screen zone of the existing "deep" well at Monitoring Well Cluster SY-6. Therefore, this existing "deep" well was judged to be a suitable upgradient monitoring well.

During the February 18, 1993 meeting, a decision was also made to collect groundwater samples from Well PK-10I (located at the Town Park) immediately following installation to determine the presence/absence of VOCs. Well PK-10I was selected for sampling as it monitors the vertical interval of the aquifer containing the highest concentrations of leachate indicator parameters; if VOCs were present off-site, they would likely be detected in this part of the aquifer. The purpose of sampling Well PK-10I in advance of the scheduled groundwater sampling rounds was to reevaluate the number and locations of monitoring wells for the drilling program based on whether VOCs were present and at what concentrations. Samples were collected on May 4, 1993, but the well had to be resampled on June 2, 1993 because data validation indicated a laboratory quality control problem. The June results were also validated and were judged acceptable; however, the data were inconclusive because although VOCs were detected, they were found at relatively low concentrations. Therefore, on July 16, 1993, another meeting was held with the USEPA, the Town, LKB, and Geraghty & Miller and it was agreed that the drilling program should be continued as specified in the SOP. On July 26, 1993, drilling resumed at Nassau County Storm-Water Basin No. SWB-218.

2.1.1 Drilling Methods

Three drilling methods were employed during the Off-Site Groundwater Study: (1) the air-rotary (Barber) method, (2) the modified mud-rotary method, and (3) the hollow-stem auger method. The air-rotary method was used for drilling the two exploratory borings

and installing a deep well at these locations, as well as for installing 10-inch diameter surface casings for three of the six borings drilled by the modified mud-rotary method. The modified mud-rotary method was used to drill and install the remaining wells except for one of the two shallow wells, which was installed by the hollow-stem auger method.

The Town obtained permission from Nassau County and Gordon Floral Realty, Inc. (Gordon) to drill and install off-site monitoring wells at Nassau County Recharge Basin No. SWB-218 (Wells RB-11S, RB-11I, and RB-11D) and the property leased by Roadway (Wells RW-12I and RW-12D). A security guard was supplied by Delta to ensure public safety at these two off-site drilling locations, as well as at the Town park, the third off-site drilling location. The security guard arrived on-site at the end of each work day before the drillers left the site and did not leave until the drillers returned the following day. Round-the-clock security coverage was also provided on the weekends and holidays. Thus, each drilling site was monitored continuously until work was completed and safe site conditions were restored at each off-site drilling location. In addition, a temporary fence was placed around each active off-site drilling site and signs were posted to warn the public of the on-going work. After the monitoring wells were installed at the three off-site drilling sites, the sites were restored to their original condition to the extent practicable.

At the February 18, 1993 meeting, "Greenstuff," an environmental lubricant, was approved by the USEPA for lubricating the drill rods. Hydrant water was used by the drillers to maintain hydraulic head in well borings to suppress sand heave, to mix drilling mud and grout, and for steam cleaning. Samples of this hydrant water were periodically collected by the Geraghty & Miller field hydrogeologist for analysis of VOCs to monitor the quality of water being used during the drilling process. Samples were sent to EcoTest Laboratories, Inc. (EcoTest) of North Babylon, New York for analysis by USEPA Method 601. VOCs were not detected in any of the hydrant water samples collected.

The three drilling methods used to install the nine monitoring wells are briefly described in the following sections, and detailed information on problems that were encountered in the field or variances to the SOP protocols is provided. A detailed description of the drilling methods can be found in the SOP.

2.1.1.1 Air-Rotary (Barber) Method

The air-rotary drilling method (Barber rig) was used to drill the two exploratory borings (SY-3DD and PK-10D) and to install deep monitoring wells in each of them. As previously stated, this method was also used to install surface casings for three of the six monitoring well borings drilled by the modified mud-rotary method.

2.1.1.1.1 Exploratory Borings

The purpose of drilling the two exploratory borings was to provide on-site and off-site vertical characterization of water quality and lithology. The air-rotary drilling method was selected for this task because representative groundwater and lithologic samples can be collected using this method (see the OU-2 RI Work Plan for the rationale for using this method). The water-quality and lithologic data collected from the exploratory borings were used to determine the depths of the monitoring wells and screen settings. Details on the criteria used to terminate the exploratory borings are provided in Section 2.1.4 (Termination Depths of Exploratory Borings), and details on field testing for leachate indicators are provided in Section 2.1.3 (Field Testing for Leachate Indicators). Drilling of the two exploratory borings was performed by Catoh, Delta's subcontractor.

From November 9, 1992 to December 1, 1992, Catoh drilled the first on-site exploratory boring (SY-3DD) next to existing Monitoring Well Cluster SY-3 to a depth of 540 feet below land surface (see Figure 1-2). During a site meeting on October 30, 1992

between representatives of the USEPA and Geraghty & Miller, it was agreed that the location of this boring would be moved approximately 50 feet west of the originally proposed location to minimize noise levels for residents living adjacent to the landfill.

Boring SY-3DD was advanced by rotating successively smaller diameter steel casings to the termination depth. Catoh started drilling with a 16-inch diameter casing until it could not be advanced further because of frictional resistance. The next casing was 10 inches in diameter and was inserted to the bottom of the 16-inch diameter casing (i.e., the bottom of the boring); drilling then continued until the 10-inch diameter casing could not be advanced further because of frictional resistance. This process was repeated using 8-inch diameter casing, followed by 6-inch diameter casing, until the termination depth was reached. The SOP had specified starting with 14-inch diameter steel casing, but this size was not available when the drilling began.

After each 20-foot section of casing was advanced and another section of casing had been welded to the length of casings in the boring, the cuttings from inside the casing were removed using compressed air from the drill rig. However, beyond a depth of approximately 300 feet, extremely fine-grained sand from the formation began heaving inside the casing, and water from a hydrant located on Gordon Drive had to be used to wash the sand heave out of the boring. This was accomplished by pumping the water through the drill rods as the bit was lowered back into the bottom of the boring, washing out the sand heave in the process.

Because of the resistance encountered during the drilling of SY-3DD, the 8-inch diameter casing could not be advanced to the termination depth (540 feet). Therefore, the boring was completed using 6-inch diameter casing in accordance with the SOP, and a 2-inch diameter well was installed in SY-3DD with the approval of the USEPA.

From December 9 to 31, 1992, the off-site exploratory boring (PK-10D) at the Town Park was drilled. Drilling proceeded smoothly at this location, sand heaving was more easily

controlled, and Catoh was able to advance the 8-inch diameter casing to completion depth (499 feet) by flushing out the boring after each 20-foot section of drill casing had been installed. Boring PK-10D was completed as a 4-inch diameter well.

The cuttings for both borings were stored in pits next to each boring. After each boring was completed, Delta removed the cuttings from the pits and disposed of them at a designated location at the landfill. The native soil originally removed to create the pits was used to refill them, but clean fill was needed to supplement the native soil to fill the pit for PK-10D.

2.1.1.1.2 Surface Casings

The Barber rig was also used to install 10-inch diameter, black-steel, surface casings for three of the six well borings (PK-10S, RB-11I, and RB-11D) that were drilled by the modified mud-rotary method. This work was performed by Catoh before Delta began mud-rotary drilling to prevent the loss of drilling mud to the permeable coarse sand and gravel deposits that extend from land surface to a depth of approximately 140 feet. The Barber rig was not used to install the surface casings for the two mud-rotary borings (RW-12I and RW-12D) at the Roadway property because an access agreement for drilling had not been executed between the Town and the property owner (Gordon) before Catoh demobilized their rig and equipment from the site. In addition, PK-10I needed to be relocated (following Catoh's departure) due to problems at the original drilling site for this boring/well (see Section 2.1.1.2 [Modified Mud Method]). Therefore, with the approval of the USEPA, the surface casings for these three borings/wells were installed using a combination of two drilling methods: hollow-stem auger and cable tool. Delta subcontracted United Well and Pump Corporation (United), Bohemia, New York to perform the cable tool drilling for PK-10I, while Delta performed the cable tool drilling for RW-12I, RW-12D and also the hollow-stem auger drilling at all three of these locations. The hollow-stem auger rig was used to advance 12-inch inside diameter augers as deep as possible (approximately 50 feet). Then, the cable tool rig was used to install and advance

10-inch diameter surface casing through the auger flights as far as possible (approximately 107 feet for Well RW-12I, 105 feet for Well RW-12D, and 128 feet for Well PK-10I). This combination of techniques effectively cased-off the upper permeable deposits at these three boring/well locations.

Catoh also installed a 10-inch diameter surface casing next to existing upgradient Well Cluster SY-6; this casing was for the deep well (SY-6DD) that was to be drilled by the modified mud-rotary method at this location. However, as discussed in Section 2.1 (Off-Site Groundwater Study), Well SY-6DD was deleted from the drilling program since existing Well SY-6D could serve the same purpose which was to monitor the deep zone upgradient of the landfill. Delta sealed the surface casing at this location using a tremie pipe to pump cement/bentonite grout from the bottom of the casing to land surface and also welded a steel plate over the top of the casing.

2.1.1.2 Modified Mud-Rotary Method

The modified mud-rotary drilling method was used to drill six of the nine well borings during the OU-2 RI (PK-10S, PK-10I, RB-11I, RB-11D, RW-12I, and RW-12D). This work was performed by Delta, the prime drilling contractor, using a Failing F-10 rig. The modified mud-rotary method consisted of drilling most of the well boring using the conventional mud-rotary drilling method and then converting to the reverse rotary method for the final 30 feet of drilling. The purpose for converting to the reverse rotary method was to avoid the formation of a mudcake on the borehole wall in the screen zone. The reverse rotary method uses potable water, instead of mud, as a drilling fluid. When the modified mud-rotary method is used, wells can be developed more easily.

The screen zones for the seven monitoring wells not drilled by the air-rotary method were preselected based on the water-quality and lithologic profiles (sample/core logs and geophysical logs) from the two exploratory borings (SY-3DD and PK-10D). These screen settings were proposed by Geraghty & Miller in a January 20, 1993 letter to LKB

(Appendix A) and were subsequently approved by the USEPA. The proposed screen settings for the shallow, intermediate, and deep monitoring wells were 140 to 150 feet below land surface, 350 to 360 feet below land surface, and 490 to 500 feet below land surface, respectively. Refinements to the preselected screen zones were made at the Recharge Basin (Wells RB-11S and RB-11D) based on the geophysical logs obtained from the deep boring at this location (see Section 2.1.5 [Geophysical Logging]).

Four of the five borings/wells originally proposed to be installed by the modified mud-rotary method were drilled as planned (RB-11I, RB-11D, RW-12I, and RW-12D). However, during the drilling of PK-10I at the Town Park on February 26, 1993, drilling mud circulation was lost at approximately 328 feet below land surface and could not be regained by mixing more mud or by thickening it. The well boring had collapsed by the following work day (March 1, 1993). Geraghty & Miller described the problems with Well Boring PK-10I in a March 11, 1993 letter to LKB (Appendix B); in this letter, Geraghty & Miller proposed to install the shallow well (PK-10S) at this location and to redrill the intermediate depth boring/well (PK-10I) approximately 100 feet further south. The original PK-10I well boring was subsequently redrilled by Delta (became PK-10S) with USEPA approval using the cable tool method.

PK-10I was drilled at the proposed alternate location approximately 100 feet south of the original location. As stated in Section 2.1.1.2 (Surface Casings), the surface casing for the PK-10I replacement boring/well was installed using a combination of the hollow-stem auger method by Delta and the cable-tool method by United.

Drilling mud consisted of polymer-free, 100 percent bentonite mixed with potable hydrant water in portable, prefabricated metal bins. After the mud-rotary part of the drilling had been completed, the mud was flushed out of the hole using potable water and was pumped to a tanker truck that disposed of the drilling mud/cuttings at a designated

location at the landfill. Once all the mud was removed, Delta employed the reverse rotary method to complete the final 30 feet of drilling before the borehole was geophysically logged.

2.1.1.3 Hollow-Stem Auger Method

Well Boring RB-11S at the Recharge Basin was the only well boring drilled using the hollow-stem auger method. Delta used the same rig (Failing F-10) for the auger method as for the modified mud-rotary method. The SOP had specified that three shallow monitoring wells were to be installed at the Town Park, the Recharge Basin, and the Roadway property. However, as previously discussed, the shallow well at the Roadway property (RW-12S) was deleted from the drilling program and the shallow well at the Town Park (PK-10S) was installed in the original PK-10I well boring, which had been drilled by the mud rotary method and then collapsed.

2.1.2 Formation Sampling

Formation samples were collected from the deep well borings at each of the four drilling locations (SY-3DD, PK-10D, RB-11D, and RW-12D). For the two exploratory borings (SY-3DD and PK-10D) drilled by the air-rotary method, the Geraghty & Miller field hydrogeologist examined cuttings from the well boring on a semi-continuous basis to record the lithology. For the two deep borings drilled by the mud-rotary method (RB-11D and RW-12D), split-spoon samplers were used to collect formation samples at 20-foot intervals, and flume samples were also examined by the Geraghty & Miller field hydrogeologist on a semicontinuous basis to monitor for changes in lithology. Descriptions of the lithology were recorded on the sample/core logs provided in Appendix C.

2.1.3 Field Testing for Leachate Indicators

During drilling of the two exploratory borings (SY-3DD and PK-10D), groundwater samples were collected at 20-foot intervals and analyzed by the Geraghty & Miller field chemist for primary leachate indicators (hardness, alkalinity, ammonia) and also for secondary leachate indicators (pH, temperature, chloride, and specific conductance). The purpose of this work was to characterize the vertical water-quality profiles on-site and off-site so that the depths/screen settings for all the borings/wells could be determined. After each 20-foot section of drill casing had been installed, groundwater samples were collected with a bailer lowered through the drill rods or the annular space between the drill rods and drill casing. Samples were analyzed on-site by the Geraghty & Miller chemist.

As expected, groundwater samples that were collected from the exploratory borings were often turbid, and, as specified in the SOP, these samples were centrifuged followed by prefiltering using Whatman 2V filter membranes before they were analyzed. The leachate indicators were analyzed according to the protocols in the SOP using either a compound-specific digital titration kit (for alkalinity, hardness, and chloride) or a field meter (for ammonia, specific conductance, and pH). Temperature was also field-measured using a mercury-filled thermometer. Three replicate samples were collected from each exploratory boring (more than 20 percent of the total number of samples) and were sent to either IEA, Inc. Monroe, Connecticut or EcoTest for analysis of four of the seven leachate indicators (ammonia, alkalinity, hardness, and chloride). A summary of the field and laboratory analytical results for samples collected from both borings is presented in Table 2-1.

The results in Table 2-1 indicate that leachate parameters were detected in Exploratory Boring SY-3DD at concentrations above the established action levels (background levels) beginning at the water table; concentrations gradually increased until maximum concentrations were generally reached between 218 and 239 feet below land surface. After this interval, leachate indicator concentrations decreased until the termination depth was reached at 540 feet. In Exploratory Boring PK-10D, the

concentrations of leachate parameters were generally lower than SY-3DD, except for the sampling interval between 340 and 380 feet below land surface where concentrations approached the highest concentrations detected at SY-3DD.

2.1.4 Termination Depths of Exploratory Borings

In accordance with the SOP, the termination depths of the two exploratory borings were determined using criteria established from background water-quality data obtained for monitoring and public supply wells within approximately 2 miles of the landfill (Figure 2-1). Geraghty & Miller obtained historical groundwater quality data, dating back to 1989, for leachate indicator parameters from eight Nassau County Monitoring Wells (OP-1, OP-3, P-7, P-8A, PT-2, PT-3, T-6A, and TU-1) and data, dating back to 1990, for a total of six public supply wells owned by the Plainview Water District (N4097, N6076, and N6077), the Hicksville Water District (N8249 and N6191), and the Jericho Water District (N7781). In addition, from September 24 to 28, 1992, Geraghty & Miller collected samples from all of the eight Nassau County monitoring wells listed above and all but two of the water district wells (N6191 and N7781). Samples were analyzed for leachate indicators so current data could supplement the historic data. These data were then statistically analyzed by Geraghty & Miller to establish action levels for each of the seven leachate indicators so that termination depths of the two exploratory borings (SY-3DD and PK-10D) could be determined. A different statistical method than that specified in the RI Work Plan was used to analyze the background water-quality data because the data set was smaller than expected and the specified method was not appropriate for the limited number of data points available from the wells. The rationale for using the replacement statistical method was explained in a December 3, 1992 letter from Geraghty & Miller to the USEPA (Glasser and Wolfert, pers. comm. 1992). This statistical procedure is described in Appendix D.

The action levels established for the seven leachate indicators using the replacement statistical method were lower than the action levels established using the SOP method and,

therefore, being more conservative, were used to determine the termination depths of the exploratory borings. According to the RI Work Plan, Exploratory Borings SY-3DD and PK-10D were to be terminated when either of the following conditions were met:

1. The concentrations of the three primary leachate indicators (ammonia, alkalinity, and hardness) were below their respective action levels in two consecutive samples, or

2. If only one of the primary indicators remained slightly above its action level in consecutive samples, then the action levels of the three secondary leachate indicator parameters were to be evaluated. A boring was terminated when one or more of the secondary action levels were not exceeded.

2.1.5 Geophysical Logging

Natural gamma geophysical logging was conducted by Geraghty & Miller in the deep boring at each of the four drilling locations (SY-3DD, PK-10D, RB-11D, and RW-12D). Electric logging was also conducted by Geraghty & Miller in the two deep mud-rotary borings (RB-11D and RW-12D).

Gamma logging involves the measurement of naturally occurring radiation originating from geologic material opposite the borehole and provides a qualitative guide to correlating stratigraphy and evaluating permeability. Gamma radiation is emitted from certain elements that are unstable and decay spontaneously into other, more stable elements. Although other types of radiation are given off by naturally radioactive minerals (alpha and beta emissions), only gamma rays are measured in well logging because only these rays can penetrate materials such as casing and cement grout. Gamma logging has a unique advantage over electric logging because it can be performed either in cased wells or open boreholes, whereas electric logging can only be conducted in uncased boreholes filled with fluid.

The minerals commonly found in sedimentary deposits, such as clay, limestone, and sandstone, contain small amounts of radioactive potassium-40 and decay products of uranium and thorium. Potassium is an important constituent of clay, mica, feldspar, and shale, and its radioactive isotope (potassium-40) emits gamma rays. Because these materials tend to be finer grained, elevated gamma responses are often interpreted as corresponding to sediments of relatively low permeability. Coarser grained sand contains no potassium or radioactive potassium-40 and emits gamma rays at relatively low levels. Consequently, the gamma log shows more radiation (counts per second) at depths corresponding to clay or silt, and lower radiation levels (fewer counts per second) at depths corresponding to sand or sandstone layers, if the sand is mostly quartz.

Geraghty & Miller conducted the geophysical logging program using its truck-mounted EG&G Mount Sopris Model II logging system, which consists of a logger and the probe. The probe contains a scintillation-type receiver and a counting circuit. The probe, which was attached to a cable, was lowered and raised the entire length of each well while graphs were produced by the digital logger recorder, which was located in the truck. Radiation intensity for a given geologic formation was measured by the probe and expressed as the average number of counts per second. Since the logger is fully automated and the probe is factory sealed, no calibration was required.

As mentioned in Section 2.1.1.2 (Modified Mud-Rotary Method), the screen zones for all monitoring wells not drilled by the air rotary method were preselected based on the water-quality and lithologic profiles (including geophysical logs) obtained from the two exploratory borings. The preselected screen settings were adjusted for Wells RB-11S and RB-11D where the geophysical log from the deep mud rotary boring (RB-11D) indicated a low-permeability interval in the preselected screen zone.

Although gamma logging can be done in steel casing and is very effective in identifying low-permeability layers (clay or silt or combination), steel decreases the intensity of the gamma output. The larger the casing diameter, the more the gamma output is

reduced, and a correspondingly larger correction factor is needed to adjust the gamma log to a "no casing" condition. The impact is cumulative when casings are telescoped inside one another as they are in SY-3DD and PK-10D. Therefore, correction factors were obtained from the Mount Sopris Company for each casing diameter used. Copies of the uncorrected geophysical logs (gamma and electric) are presented in Appendix E. The corrected gamma logs are included on the hydrogeologic cross sections (see Section 3.1 [Hydrogeology]).

2.1.6 Monitoring Well Construction

The construction details for the nine new and 15 preexisting monitoring wells are presented in Table 2-2, and monitoring well construction logs are provided in Appendix F. The monitoring wells were constructed according to the protocols in the SOP. Each well was constructed of 4-inch diameter polyvinyl chloride (PVC) casing (schedule 40) and 10 feet of 4-inch diameter stainless-steel screen, except for Well SY-3DD, which was constructed of 2-inch diameter PVC casing and stainless-steel screen. As previously discussed, 2-inch diameter casing and screen were used in SY-3DD to complete that well (see Section 2.1.1.1.1 [Exploratory Borings]). The wells were sand-packed, using J. Morie Company No. 1 sand, which was placed around the screen from the bottom of the boring to several feet above the top of the screen. Another layer of finer sand (J. Morie Company No. 00) was added above the No. 1 sand to complete the sand pack and serve as a buffer between the sand pack and the grout seal. Volclay grout was pumped through a side port tremie pipe into the annular space between the borehole wall (for the mud-rotary and auger borings) or the steel casing (for the air-rotary borings) and the well casing from the top of the fine sand up to about 2 feet below land surface. Except for Well SY-3DD, each well was completed at land surface with a flush-mounted, curb box cemented in the ground around the well head. Well SY-3DD was completed aboveground (stickup) because it is located on-site in a brushy area. The 6-inch diameter steel casing used to complete the drilling of SY-3DD was cut off approximately 2.5 feet above land surface to serve as a protective stand pipe for the 2-inch diameter stickup.

According to the SOP, the steel drill casings needed to drill the exploratory borings were to be removed from the ground, except for the 10-inch diameter casing, which was to be left to case-off the upper permeable deposits. However, both wells SY-3DD and PK-10D were constructed with most of the steel drill casing left in the ground to provide additional well integrity. Only the smallest drill casings in the exploratory borings (6-inch diameter in SY-3DD and 8-inch diameter in PK-10D) were pulled back just enough to expose the screen and a few feet of well casing during sand packing. This change to the SOP (i.e., leaving the steel drill casings in the ground) was proposed in an August 25, 1992 letter from Geraghty & Miller to LKB (Geraghty & Miller, Inc. 1992) and was subsequently approved by the USEPA. Due to concern that these drill casings for Wells SY-3DD and PK-10D might settle due to potentially unstable subsurface conditions resulting from sand heaving during drilling, Delta joined the casings together at land surface by welding concentric metal rings between the casings. In addition, metal strips ("sleepers") were welded onto opposite sides of the outermost (16-inch diameter) steel casing; these metal strips extend several feet in either direction (perpendicular to the well casing) in a trench that was backfilled.

As stated in Section 2.1.1.2 [Modified Mud-Rotary Method], Monitoring Well PK-10S was constructed in the initial PK-10I well boring that collapsed. Geraghty & Miller's recommendation to salvage the PK-10I boring (see Appendix B) was approved by the USEPA, and the collapsed PK-10I well boring was salvaged by using a cable-tool rig, which advanced 6-inch diameter casing inside the existing 10-inch diameter surface casing to a total depth of 151 feet. After the cuttings were removed by bailing them from the 6-inch diameter casing, the 10-foot section of 4-inch diameter stainless-steel screen and schedule 40 PVC casing was installed to a depth of 149 feet. The 6-inch diameter casing was then pulled back as sand pack was added in the annulus between the 4-inch diameter well and the 10-inch diameter surface casing from the bottom of the boring to 5 feet below land surface. The depth to the top of the gravel pack will be measured periodically to check for settling, and additional gravel will be added as needed. To prevent the potential settling of the well, clamps were used to secure the 4-inch diameter PVC well casing to the 10-inch diameter surface casing at land surface. The annular space of Well PK-10S was sealed using

a rubber gasket set above the gravel pack, a metal plate/ring was then welded on the inside of the 10-inch diameter steel casing to cover the rubber gasket. A 1-inch diameter access port was installed in the plate for measuring the depth of the gravel and for adding gravel, if needed. A large flush-mounted manhole was used to complete the well.

2.1.7 Surveying of Monitoring Wells

On November 22, 1993, after the OU-2 RI drilling program was completed, the measuring points of the nine new monitoring wells (SY-3DD, PK-10S, PK-10I, PK-10D, RB-11S, RB-11I, RB-11D, RW-12I, and RW-12D) and five preexisting on-site monitoring wells (W-3, SY-2R, SY-2D, SY-7, and SY-6) were surveyed to the National Geodedic Vertical Datum (mean sea level) by LKB (New York State-licensed surveyors) to an accuracy of 0.01 feet. The horizontal locations of the wells were surveyed to the New York State Plane Coordinate system. These data are presented in Table 2-3. The five preexisting on-site wells were resurveyed because the measuring point had changed due to damage to the well or because the well had been repaired.

2.1.8 Well Development

Following installation, five (SY-3DD, PK-10I, PK-10D, RB-11I, and RB-11D) of the nine new monitoring wells were developed using compressed air with an oil filter installed in the air line air compressor. The four other wells (PK-10S, RB-11S, RW-12I, and RW-12D) were developed using a submersible pump. Surging action was accomplished by turning the air compressor or submersible pump on and off. A well was considered developed when the turbidity decreased to less than 50 nephelometric units (NTUs) and when more water was removed from the well than was added during drilling. Development water from the eight off-site monitoring wells was pumped into a tanker truck supplied by Delta and disposed of at a designated location at the landfill. Hay bales were used to prevent runoff from leaving the site. Development water from Well SY-3DD was pumped directly to the designated location at the landfill.

During the initial development of Well PK-10D, approximately 8,000 gallons of water were inadvertently discharged to the ground by the driller. Geraghty & Miller suspended development of this well until a tanker was brought to the site to containerize the water and dispose of it at the landfill. This development water was found to have formed a small puddle just covering the grass (about 200 square feet) and was rapidly absorbed by the soil. To evaluate any potential hazard, Geraghty & Miller sampled the well, at the Town's direction, before development was completed. The samples were sent to EcoTest for rush-analysis of VOCs and leachate parameters. VOCs were not expected to be detected given the depth of the well (499 feet), the intended use of the well (clean, deep monitoring point), the results of in-field leachate testing, and the fact that the well screen was set below a low-permeability unit. The analytical results (Appendix G) indicated that VOCs were not detected and the concentrations of the leachate indicator parameters that were detected (ammonia, chloride, alkalinity, and hardness) did not represent a public health concern.

2.1.9 Well Repair/Well Deletions

During the Off-Site Groundwater Study, one monitoring well (SY-7) was repaired and three monitoring wells (W-3, W-4, and SY-5) were deleted from the groundwater sampling program. These repairs and deletions are discussed in detail in the following sections.

2.1.9.1 Repair of Monitoring Well SY-7

Monitoring Well SY-7 was repaired because the parking lot in which it is located (adjacent to the TOB-DPW building at the site) was repaved and the well head (curb box) was covered with asphalt. The horizontal survey coordinates from the OU-1 RI were used to locate the well head and repairs were performed by Delta on October 15, 1993. When the well head was exposed, the steel well casing was found to be bent at an acute angle. To repair the well, Delta removed the bent section of casing and coupled a new section of casing to the well. A new curb box was then installed flush with the new level of the

parking lot to complete the repair. In addition, Well SY-7 was redeveloped because sediment was found at the bottom of the well. Development was accomplished using compressed air and the water was containerized and disposed of at the landfill.

2.1.9.2 Deletion of Monitoring Wells W-3, W-4, and SY-5 from the Groundwater Sampling Program

Shallow Monitoring Wells W-3, W-4, and SY-5 were deleted from the groundwater sampling program with the approval of the USEPA because it was determined that these three wells were unnecessary monitoring points for the OU-2 RI. These wells had been installed along the center line of the long axis of the landfill for use during the OU-1 RI. Monitoring Well W-4, which had been scheduled for repair concurrently with Well SY-7, could not be located even with a systematic search using a backhoe. At this point, an evaluation was made as to whether a shallow monitoring well was actually needed for the OU-2 RI at this location. The nearby existing monitoring wells were determined to be sufficient for the purpose of the OU-2 RI and for long-term monitoring. This same rationale was applied to Well W-3, which was found damaged (the casing was bent at depth), and to Well SY-5, which could not be located, although the surface casing (stickup) was found. Well W-3 was resurveyed as discussed in Section 2.1.7 (Surveying of Monitoring Wells); it was still functional for water-level monitoring. However, this well was no longer functional for water-quality monitoring because a bailer for sampling could no longer fit in this well. Well W-3 will be abandoned according to the New York State Department of Environmental Conservation (NYSDEC) protocols during the OU-1 Remedial Design Program.

2.1.10 Measurement of Water Levels

Water-levels were measured in both the Syosset Landfill monitoring wells (on-site and off-site) and in the Nassau County monitoring wells during the Off-Site Groundwater Study so that vertical hydraulic gradients and groundwater flow directions could be

determined and potentiometric surface maps could be prepared for assessing horizontal hydraulic gradients and flow directions. Details concerning the measurement of water levels are presented in the following sections.

2.1.10.1 Regional Water Levels

On October 29, 1993, Geraghty & Miller measured water levels in 18 Nassau County monitoring wells located within approximately 2 miles of the site. Water levels were measured using an electronic M-scope and following SOP protocols. Of the 18 wells in which water levels were measured, 16 had also been measured during the OU-1 RI. Well P-7, which had been measured during the OU-1 RI, was destroyed; therefore water levels were measured in a replacement well (P-7A), located approximately 2,000 feet south-southeast of P-7. Water-level elevations are summarized in Table 2-4 and were calculated from measuring point elevation data provided by Nassau County.

2.1.10.2 Site Water Levels

On October 28, 1993 and on November 24, 1993, Geraghty & Miller measured water levels in the monitoring wells on- and off-site following SOP protocols. Water-level elevations are summarized in Table 2-5 and were calculated from the surveyed measuring-point elevations. Water-level measurements were made using an electronic M-scope.

2.1.11 Groundwater Sampling Program

In accordance with SOP protocols, two rounds of groundwater samples were collected by Geraghty & Miller from the nine new monitoring wells and 12 of the 15 preexisting on-site monitoring wells. The first round of groundwater samples was collected from November 1 through 5, 1993, and the second round was collected from November 29 through December 3, 1993. At the end of each sampling day, samples were shipped via

overnight courier (Federal Express) to IEA Laboratories, Inc. (IEA), Monroe, Connecticut following chain-of-custody procedures. Water sampling logs and chain-of-custody forms are in Appendix H.

2.1.11.1 Revised Parameter List

The parameter list specified in the SOP was revised following a meeting held with the USEPA, the Town, LKB, and Geraghty & Miller on February 18, 1993. The revision was based on a reevaluation of the OU-1 RI water-quality data in conjunction with the then-current OU-2 RI field data (vertical water-quality profiles and lithologic logs) that had been collected from the two exploratory borings (SY-3DD and PK-10D). The revised parameter list (Table 2-6) was proposed in an April 1, 1993 letter from Geraghty & Miller (Glasser and Wolfert, pers. comm. 1993) to LKB and was subsequently approved by the USEPA. PCBs, acid-extractable compounds, and cyanide were deleted from the parameter list because, except for 4-methyl phenol, which was detected in two wells (SY-5 and SY-7) at concentrations less than 2 micrograms per liter (ug/L), and cyanide, which was detected in one well (SY-6) at a concentration of less than 0.2 ug/L, these analytes were not detected in the groundwater during the OU-1 RI. Base neutral compounds were also deleted from the parameter list because they were mostly undetected during the OU-1 RI. Phthalates, a class of base neutral compounds, were detected at slightly higher concentrations during the OU-1 RI; however, because these compounds were also detected in the method blanks and are known laboratory contaminants, these phthalates are not contaminants of concern and were therefore deleted from the parameter list.

During the OU-1 RI, VOCs were not detected at concentrations consistent with a plume that has the landfill as a source. However, VOCs were retained on the parameter list due to concern that these mobile compounds may have migrated off-site. Groundwater samples collected for the first and second sampling rounds were analyzed by IEA for

analytes on the revised parameter list, including VOCs, metals (total and dissolved), and leachate indicator parameters (inorganics). The revised parameter list is presented in Table 2-6.

Two samples were collected from each monitoring well during each round for metals analysis. One sample was unfiltered for analysis of total metals and the other sample was filtered through a 0.45-micron filter membrane for analysis of dissolved metals. The purpose of these two analyses was to determine whether colloidal particles were contributing to the metals detected. When groundwater samples containing colloidal particles are acidified, sorbed metals tend to be put into solution through cation exchange thereby increasing the total metals concentrations in the water sample (Strausberg 1983). Thus, the results of the unfiltered metals analysis do not reflect only dissolved metals in the groundwater. Rather, these results reflect the combination of dissolved metals and metals desorbed through acidification.

Samples collected from each well for measurement of field parameters (temperature, pH, and specific conductance) were divided into four aliquots and each aliquot was analyzed in the field for the three parameters by the Geraghty & Miller sampling team. These measurements were recorded on the water sampling log forms presented in Appendix H.

2.1.11.2 Quality Control Samples

Quality Control (QC) samples, consisting of trip blanks, field blanks, matrix spike, and matrix spike duplicates, and replicates, were utilized during the groundwater sampling program to monitor sampling and laboratory performance. With each daily shipment of samples to the laboratory, trip blanks, prepared by IEA, and field blanks, prepared daily by Geraghty & Miller, were sent, following chain-of-custody procedures, via overnight courier to IEA. Because trip blanks were required to be less than 24 hours older than each accompanying sample shipment sent to the laboratory, on the first day of each sampling round, IEA sent a same-day courier with a trip blank that had been prepared at the

laboratory that morning. For each sampling day thereafter, IEA sent trip blank samples, via overnight courier, that were prepared the previous night. Also, with the trip blank sent on the first day of each round, the same-day courier delivered analyte-free water prepared by IEA (for field blank preparation and for decontaminating sampling equipment), as well as acid preservatives for several of the analytical parameters. The analytical parameters that required field acidification to a pH value of less than 2 were as follows: VOCs (hydrochloric acid), metals (nitric acid), ammonia (sulfuric acid), and total hardness (nitric acid). To ensure that the analyte-free water was clean, IEA analyzed samples of batched water produced for the two sampling rounds. The results of IEA's analyses show that the concentrations of parameter list analytes were below USEPA limits (Appendix I).

Replicate samples were collected by Geraghty & Miller during both sampling rounds from the same three off-site intermediate-depth monitoring wells (PK-10I [Rep-2], RB-11I [Rep-1], and RW-12I [Rep-3]) that monitor the most contaminated portion of the leachate plume (as determined by in-field leachate parameter testing during drilling of Exploratory Borings SY-3DD and PK-10D). Samples were collected for matrix spike and matrix spike duplicate analyses from Monitoring Wells SY-1 and PK-10D for both sampling rounds. CDM collected split samples from on-site Monitoring Well SY-1 (shallow) and off-site Monitoring Wells RB-11I (intermediate) and RB-11D (deep) during both sampling rounds. The parameter list being used by CDM includes the OU-2 RI parameter list plus additional parameters. CDM's list is longer than the OU-2 RI parameter list because CDM's contract laboratory does not perform analyses for customized parameter lists and only performs analyses for "packaged" lists that include predetermined parameters. The USEPA and CDM will compare the analytical results for the split samples with the results presented in this report as an independent QC check.

2.1.11.3 Well Evacuation and Sample Collection

Approximately three well volumes of water were evacuated from each monitoring well before samples were collected. Evacuation was accomplished by using either a

submersible pump (2- or 4-inch diameter) or a bailer (see Water Sampling Logs in Appendix H). Four of the preexisting on-site monitoring wells (SY-1D, SY-2R, SY-6D, and SY-8) were purged using the existing permanently installed submersible pumps: The remaining monitoring wells were purged using submersible pumps that were temporarily installed and decontaminated according to the protocols in the SOP. Permanent submersible pumps have not yet been installed in the nine new monitoring wells because several different pump systems were evaluated for long-term cost-effectiveness and logistics. Based on this evaluation, the Town, in consultation with Geraghty & Miller and LKB, ultimately decided that the submersible pumps be installed as specified in the SOP because that pumping system was judged the most appropriate of the systems evaluated.

Purge water from the on-site monitoring wells was discharged to the ground. Purge water from the off-site wells was pumped to a tanker and transported to the landfill for disposal at a designated location.

For the four wells that had permanently installed submersible pumps, water samples for all parameters except VOCs were collected from the pump discharge; water samples for VOC analysis were collected from these wells using a 3/4-inch diameter PVC bailer. A Teflon bailer was used to collect samples for all parameters from the wells without permanently installed submersible pumps.

2.1.11.4 Decontamination of Sampling Equipment

In addition to the SOP specifications for decontamination procedures, Geraghty & Miller used acetone after Step 4 of the SOP protocol to decontaminate the sampling equipment during the two sampling rounds. This addition to the decontamination procedure was requested by the USEPA and agreed to by the Town, LKB, and Geraghty & Miller at the February 18, 1993 meeting.

2.1.11.5 Data Validation

The VOC and metals data were validated in accordance with the guidelines in the USEPA Region II SOPs "CLP Organics Data Review and Preliminary Review" (USEPA 1992) and "Evaluation of Metals Data for Contract Laboratory Program (CLP)" (USEPA 1992). The documentation prepared as a result of validating the data according to the USEPA Region II SOPs is presented as a separate document entitled "Data Validation Summary Report for the Second Operable Unit Remedial Investigation of the Syosset Landfill, Syosset, New York." Because the USEPA has no SOPs for validating leachate indicator parameters, Geraghty & Miller performed all QC checks possible with the information reported by IEA (holding times, duplicate results, spike results, and blank results). The results of the leachate indicator data review are also contained in that document. Overall, the data were found to be acceptable and usable with the exceptions described in the Data Validation Summary Report. The qualifiers applied to the analytical results were based on the USEPA Region II data validation SOPs; a relatively small number of sample results required qualification.

2.2 OFF-SITE SUBSURFACE GAS STUDY

The Off-Site Subsurface Gas Study was conducted to determine the extent of off-site subsurface gas migration from the landfill because elevated concentrations of methane gas had been detected during the OU-1 RI. The methodologies used to construct and monitor the gas monitoring wells are described in the following sections.

2.2.1 Gas Well Installation and Construction

On September 28 and 29, 1993, Geraghty & Miller installed three additional gas monitoring wells (CS-20, CS-21, and CS-22) in accordance with the SOP, at the Clark Surgical Corporation (Clark) property, which is located west of the Syosset Landfill on the other side of the LIRR track. According to the OU-2 RI SOP and Work Plan, the three

off-site gas wells were planned to be installed at the Great Eastern Printing Company (Great Eastern) which is located south of Clark. However, Great Eastern refused permission to perform this work and the Town, therefore, sought access from Clark. The locations of these three new gas wells and the six preexisting on-site gas wells (G-6, G-7, G-8, G-10, G-13, and G-14), which were also specified to be monitored during the OU-2 RI, are shown on Figure 1-2. CDM provided oversight for installation of Wells CS-20 and CS-21 on September 28, 1993.

An 8- to 10-inch diameter borehole was excavated for each gas well, using a shovel, post-hole digger, and an iron bar, to depths of 4.7 feet (CS-20), 5.0 feet (CS-21), and 4.25 feet (CS-22). These excavation tools were decontaminated before and after each use using Micro detergent solution followed by rinsing with distilled water. Hand-slotted, 1-inch diameter, PVC screen (2 to 2.5 feet long) attached to PVC casing of the same diameter was installed in each borehole following excavation. J. Morie Company No. 1 sand was used to fill the annular space between the screen and the borehole wall from the bottom of the borehole to several inches above the top of the screen. Bentonite slurry was mixed by hand in a mortar pan using potable water and was emplaced above the sand pack to within 0.6 foot below land surface. To complete each well, a flush-mounted curb box assembly was cemented in place with a layer of native soil between the bottom of the curb box assembly and the top of the bentonite slurry seal to allow for drainage of runoff that could collect inside the curb box. The top of each new gas well was fitted with a 1-inch diameter PVC cap with 1/4-inch diameter silicon tubing attached for gas monitoring. The end of the silicon tubing was closed off with a metal clip to prevent venting. A summary of the construction details for the gas monitoring wells is presented in Table 2-7, and the gas well construction logs are presented in Appendix J.

2.2.2 Gas Monitoring

The three new off-site subsurface gas monitoring wells were monitored by Geraghty & Miller for methane and total organic vapors on 3 days of low or falling barometric

pressure (February 25, March 1, 2, and 7, 1994). In addition to these three new gas wells, four preexisting gas monitoring wells (G-6, G-7, G-13, and G-14) were also monitored as specified. Gas wells G-8 and G-10 were specified to be monitored too, but Well G-8 was destroyed and G-10 could not be located. Monitoring was performed using a Foxboro Model 128 organic vapor analyzer (OVA), a flame-ionization detector. Total organic vapors were measured using a standard OVA probe, while methane was measured using an activated charcoal-filter probe. Before measuring the wells, the OVA was calibrated using "zero" gas and 9.8 parts per million (ppm) methane. To monitor a well, the OVA probe was inserted into the silicon tubing protruding from the PVC cap and the highest reading was recorded; this high measurement occurred within the first few seconds. In February, the wells were measured first for methane using the activated charcoal filter probe, followed by the measurement for total organic vapors using the standard probe. This order was reversed for the monitoring performed in March.

2.3 SUBSURFACE GAS WELL INSTALLATIONS AND MONITORING FOR THE ON-SITE REMEDIAL DESIGN PROGRAM

As mentioned in Section 1.3 (Purpose and Scope), five additional on-site gas monitoring well clusters were installed and monitored during the OU-2 RI as part of the OU-1 (On-Site) Remedial Design Program. The installation and monitoring protocols and the monitoring results of these wells are presented in a memorandum prepared by LKB (Appendix K).

3.0 RESULTS

The results of the Off-Site Groundwater Study and Off-Site Subsurface Gas Study, which were conducted as part of the OU-2 RI, are presented below.

3.1 HYDROGEOLOGY

During the Off-Site Groundwater Study, Wells SY-3DD and PK-10D were drilled almost to the bottom of the Magothy Formation, which is estimated to be approximately 600 feet below land surface. Well SY-3DD is 540 feet deep and Well PK-10D is 499 feet deep. The four "deep" wells installed during the OU-1 RI (On-Site Groundwater Study) were only drilled to a shallow/intermediate depth from 192 to 205 feet below land surface in the Magothy Formation. The intermediate depth monitoring wells installed during the OU-2 RI are deeper than the OU-1 RI "deep" wells and range from 358.5 to 360 feet in depth.

Based on the data obtained from the formation samples and the geophysical logging, vertical lithologic profiles were established at each of the four drilling sites (SY-3, Town Park, Recharge Basin, and Roadway). These data were used to construct hydrogeologic cross sections A-A' (Figure 3-1) and B-B' (Figure 3-2); the locations of the lines of section are shown on Figure 1-2. The gamma logs for the four deep wells, which were corrected for casing interferences for Wells SY-3DD and PK-10D, are superimposed on the corresponding wells on Figures 3-1 and 3-2 to illustrate the lower permeability deposits that were encountered in the predominantly fine sandy matrix of the Magothy Formation. The lower permeability deposits, which consist mostly of clay and silt, are indicated by the deflections to the right in the gamma log and correlate well to the descriptions on the sample/core logs.

Figure 3-1, which is based on logs from on-site Wells SY-4, W-3, and SY-3DD and off-site Well PK-10D, shows the fill material, water-table surface, well screen settings, and the interpreted hydrogeologic framework. Four low-permeability layers or units, consisting of clay with or without sand and/or silt, were penetrated in the boreholes for Wells SY-3DD

and PK-10D and appear to be continuous between these wells. It is not known how far these units may extend beneath the landfill because they all occur well below the maximum drilled depths of the other on-site wells. These units occur in the Magothy beginning at about sea level, are parallel to each other, and have an apparent dip direction to the south. Regionally on Long Island, bedrock and overlying unconsolidated deposits generally dip to the southeast; therefore, the dip shown in Section A-A', which is based on only two data points, is likely an apparent dip and the true dip may be to the southeast. These units range in thickness from slightly less than 10 feet to almost 30 feet. Well PK-10D was drilled through the thickest part of the lowest unit and was installed just below it, where background water-quality conditions (leachate indicator parameters) were encountered during drilling (see Sections 2.1.3 [Field Testing for Leachate Indicators] and 2.1.4 [Termination Depths of Exploratory Borings]). Several other thinner, low permeability lenses and layers are described on the sample/core logs (Appendix C) and evidenced on the geophysical logs (Appendix E). However, these other units, which are more typical of the Magothy Formation, were not interpreted as being continuous between Wells SY-3DD and PK-10D because they are very thin and do not occur at corresponding elevations. The predominant composition of the Magothy (fine-grained sediments that include interbedded sequences of sand, with sandy clay, silt, and clay) shown on Figure 3-1 is consistent with the findings of the OU-1 RI.

The coarse-grained deposits typical of the Upper Glacial Formation, which is not saturated beneath and around the landfill, were encountered during the OU-2 RI. Based on the sample/core logs, the thickness of the Upper Glacial Formation appears to be more than 130 feet, but an exact determination of its thickness was not made because the texture and color of the Upper Glacial and Magothy Formations are frequently similar near the contact zone between them making differentiation of the units difficult.

Figure 3-2, which is based on the logs (sample/core logs and gamma logs) from the three off-site deep wells (PK-10D, RB-11D, and RW-12D), shows the water-table surface, well screen settings, and the interpreted hydrogeologic framework. The most prevalent

deposits on this figure (as on Figure 3-1) are the fine-grained sediments typical of the Magothy. The two deepest units of the four units interpolated as being continuous over the more than 800 feet separating Wells SY-3DD and PK-10D on Figure 3-1 are also interpolated to be continuous between Wells RB-11D, PK-10D, and RW-12D. These two lower units, although interpolated to be continuous over the area studied during the OU-2 field investigation, thin noticeably, especially the deepest unit, at Well RW-12D. Hydrogeologic cross section B-B' is oriented west-east, which is closer to the orientation of the strike of the formation (southwest-northeast) than the dip (southeast). Therefore, the elevations of the low permeability units should be approximately the same from well to well with no dip apparent; this is the situation on Cross Section B-B'.

The two shallowest low permeability units on Cross Section A-A' that were interpolated as being continuous between Wells SY-3DD and PK-10D apparently do not extend to the east and west to Wells RB-11D and RW-12D, respectively; however, the discontinuous nature of such units is typical of the Magothy Formation.

The shallow wells are screened at or slightly below the water table and are not overlain by any continuous low-permeability units. The three deep off-site wells are all screened below the deepest low permeability unit that is continuous over the study area, while the three off-site intermediate wells are screened above this deepest unit, but below the other (shallower) continuous unit in the study area.

3.1.1 Regional Horizontal Direction of Groundwater Flow

The water-level elevation data collected by Geraghty & Miller from the 18 Nassau County monitoring wells in the vicinity of the site on October 29, 1993 (Table 2-4) were used to construct the regional potentiometric surface of the shallow zone of the Magothy aquifer (Figure 3-3). As shown on this map, the regional east-west orientation of the groundwater divide is south of the site at almost exactly the same position and orientation that was documented during the OU-1 RI. North of this divide, groundwater flows in a

northerly direction, and south of the divide, groundwater flows in a southerly direction. The direction of groundwater flow from the site is in a north-northeasterly direction, as shown on Figure 3-3, which is consistent with the regional direction of groundwater flow documented during the OU-1 RI.

3.1.2 Site-Specific Horizontal Direction of Groundwater Flow

The water-level elevation collected by Geraghty & Miller from the nine new and 13 preexisting monitoring wells on October 28, 1993 and November 24, 1993 (see Table 2-5) were used to construct potentiometric surface maps of the shallow zone (Figures 3-4 and 3-5, respectively), and the intermediate zone (Figures 3-6 and 3-7, respectively). Flow maps of the deep zone for the October and December rounds (Figures 3-8 and 3-9, respectively) were also developed to depict the direction of groundwater flow. A discussion of the groundwater flow direction in each zone of the Magothy aquifer is presented in the following sections.

3.1.2.1 Shallow Zone

As shown on Figures 3-4 and 3-5, groundwater flows from the east and west boundaries of the site toward the center of the landfill; at this point, the flow converges and moves in a northerly direction toward the Town Park where Well Cluster PK-10 is located. This pattern was observed on both October 28, 1993 and November 24, 1993 and is similar, although more pronounced, to the pattern observed on October 28, 1988 during the OU-1 RI (see Figure 8 in the OU-1 RI report). This general northerly groundwater flow direction observed in the shallow zone of the Magothy is consistent with the regional flow direction depicted on Figure 3-3, but more variability is seen on the site-specific scale than the regional scale. This local variability of the groundwater flow direction observed on the site-specific scale is likely due to the greater density of data points locally, as compared to

regionally, and the proximity of the site to the regional groundwater divide, which results in a correspondingly relatively flat horizontal hydraulic gradient on-site (see Section 3.1.4 [Comparison of Horizontal and Vertical Hydraulic Gradients]).

3.1.2.2 Intermediate Zone

Water-level elevation data from the four on-site "deep" wells (SY-1D [192 feet], SY-2D [200 feet], SY-3D [199 feet], and SY-6D [205 feet]) and three off-site intermediate wells (PK-10I [362 feet], RB-11I [358.5 feet], and RW-12I [360 feet]) were used to prepare the potentiometric surface maps (Figures 3-6 and 3-7) for the intermediate zone of the Magothy aquifer. These seven wells are screened at two different levels in the intermediate zone, but were combined to prepare a composite map. Ideally, to use wells on the same map for determining the groundwater flow direction, the elevations of the screen zones should be similar. However, in many investigations of contamination, wells are installed in phases at various depths to provide specific information on contaminant distribution, with the result that the monitoring network may not be ideal for water-level mapping purposes. The alternative to preparing composite maps would be to prepare two or more maps with fewer data points per map (i.e., shallow and deeper intermediate maps with four and three data points, respectively). Unfortunately, this often results in insufficient control to confidently determine the groundwater flow direction. As such, component maps usually are the best solution, especially if they are carefully compared to other data. In this specific case, the composite intermediate maps show a general flow direction consistent with the shallow and deep maps and appear to accurately depict flow in the intermediate zone.

As shown on Figures 3-6 and 3-7, groundwater in the intermediate zone in the eastern part of the study area flows in a northwesterly to north direction while to the west the flow is oriented slightly east of north. This groundwater pattern is virtually the same for both dates on which water levels were measured.

3.1.2.3 Deep Zone

The groundwater flow direction in the deep zone was determined by triangulating the water-level elevation data between the four deep monitoring wells (SY-3DD, PK-10D, RB-11D, and RW-12D) where water-level measurements were collected on October 28, 1993 (Figure 3-8) and November 24, 1993 (Figure 3-9). Contour maps were not prepared for the deep zone because of the sparsity of data points. The flow arrow on Figure 3-8 and the westernmost flow arrow on Figure 3-9 are the result of triangulating between wells RW-12D, SY-3DD, and PK-10D. The easternmost flow arrow on Figure 3-9 is the result of triangulating between Wells PK-10D, SY-3DD, and RB-11D, a similar triangulation was not done for Figure 3-8 because of the anomalous water-level elevation in Well RB-11D on October 28, 1993.

For both deep flow maps (Figures 3-8 and 3-9), groundwater is shown flowing in a northerly direction with a northeasterly component also apparent near the Town Park in November 1993 (Figure 3-9).

3.1.3 Vertical Direction of Hydraulic Gradient

The vertical hydraulic gradient direction (upward or downward) was determined by comparing the water-level elevations (potentiometric head) of monitoring wells within each well cluster (see Table 2-5); groundwater flows in the direction of lower potentiometric head. Due to the proximity of the study area to the regional groundwater divide, the vertical hydraulic gradient direction was expected to be downward at all six locations where wells are clustered (SY-1, SY-2, SY-3, PK-10, RB-11, and RW-12); this was found to be true at all well cluster sites on October 28, 1993, except for Well Cluster PK-10. At Cluster PK-10, the potentiometric levels were the same in PK-10I and PK-10D, indicating a lack of vertical gradient between these two wells although there was a vertical gradient downward between Wells PK-10S and PK-10I.

On November 24, 1993, a downward hydraulic gradient direction was noted at four of the six cluster locations while an upward direction was documented at Well Clusters SY-1 and PK-10 (between the intermediate and deep wells). Because only two water-level rounds, approximately 1 month apart are available, it is not known if these variances from expected conditions are long term or temporal variations; but, generally, the vertical hydraulic gradient in the study area is downward.

3.1.4 Comparison of Horizontal and Vertical Hydraulic Gradients

The horizontal and vertical hydraulic gradients were calculated using data presented in Table 2-5 and on Figures 3-4, 3-5, 3-6, and 3-7. By comparing the horizontal hydraulic gradient (I_H) and the vertical hydraulic gradient (I_V), a more complete understanding of hydrogeologic site conditions can be gained that is helpful in explaining the distribution and migration of contaminants from the landfill as evidenced by the water-quality data.

The horizontal hydraulic gradient was calculated for the shallow and intermediate zones of the Magothy aquifer by using the formula:

$$I_H = \frac{\Delta h}{L}$$

where, I_H = The horizontal hydraulic gradient (dimensionless)

Δh = The difference in potentiometric head (water-level elevation) between two groundwater contours (in feet)

L = The horizontal distance between the two groundwater contours along a flow line (in feet)

For both the shallow and intermediate zones, Δh was calculated by subtracting the lowest contour from the highest non-dashed contour on the potentiometric flow maps (Figures 3-4 through 3-7) along the distance (L) of three different groundwater flow lines approximately coinciding with the flow arrows shown on each figure. Thus, three values of I_H were calculated for the two dates for both the shallow and intermediate zones. The average I_H for the shallow zone on October 28 (see Figure 3-4) and November 24, 1993 (see Figure 3-5) was 0.00052 and 0.00073, respectively. The combined average I_H for the shallow zone for both dates was 0.00063.

The average I_H for the intermediate zone on October 28, 1993 (Figure 3-6) and November 24, 1993 (Figure 3-7) was 0.00109 and 0.00108, respectively. The combined average I_H for the intermediate zone for both dates was 0.00109, which is almost twice the I_H for the shallow zone. A horizontal hydraulic gradient was not calculated for the deep zone because contour maps were not prepared for this zone (the groundwater flow direction was depicted by triangulation).

The vertical hydraulic gradient (I_V) was calculated using the same equation with L representing the vertical distance (in feet) between two screen zones, and Δh representing the difference in potentiometric head between two screen zones (wells) in a well cluster. A summary of the data used to calculate I_V is provided in Table 3-1. In well clusters with three wells, I_V was calculated between the shallow and intermediate wells, and between the intermediate and deep wells. On October 28, 1993, the average I_V was 0.0042, and on November 24, 1993, the average I_V was 0.0024. I_V for November was lower due to the reversed (upward) gradients observed at Well Clusters SY-1 and PK-10. The reversed (upward) gradients were factored in the average values as negative numbers resulting in a lower average I_V. The combined average I_V for October and November is 0.0033. The I_V (0.0032)/$I_{H\ (\text{shallow zone})}$ (0.00063) equals approximately 5, and I_V (0.0032)/$I_{H\ (\text{Intermediate zone})}$ (0.00109) equals approximately 3, indicating that the vertical hydraulic gradient is greater than the horizontal hydraulic gradient for both the shallow and intermediate zones of the Magothy aquifer.

3.2 GROUNDWATER QUALITY

As discussed in Section 2.1.10 (Measurement of Water Levels), two rounds of groundwater samples were collected: the first round of samples was collected from November 1 through November 5, 1993, and the second round of samples was collected from November 29 through December 3, 1993. The analytical results for the samples are presented in Tables 3-2, 3-3, and 3-4 and are discussed in the following sections.

3.2.1 Volatile Organic Compounds

A summary of the analytical results for VOCs is presented in Table 3-2. The VOCs detected and their corresponding concentrations for both sampling rounds are presented on Figures 3-10 (shallow zone), 3-11 (intermediate zone), and 3-12 (deep zone). Overall, the first sampling round results, including the field replicate samples, correlate very well with the second sampling round results, both in terms of individual VOCs and their concentrations.

Of the 13 on-site wells sampled, VOCs were not detected during either sampling round in Wells SY-1 and SY-3DD. Total VOC concentrations were less than 10 ug/L for samples collected from on-site wells SY-2D, SY-2R, SY-6, SY-6D and SY-9 for both sampling rounds. The highest total VOC concentration for the on-site wells from either sampling round was 547.9 ug/L detected in Well SY-7. (This detection is not considered a result of landfill impacts [see Section 3.54]). The concentration of benzene detected in this well in November was 410 ug/L and in December was 540 ug/L. Benzene was not detected in any of the other on-site wells at concentrations greater than 2 ug/L, and it was not detected in any of the off-site wells at concentrations greater than 1 ug/L. Chlorobenzene was detected above the quantitation limit of 1 ug/L in four of the on-site wells, with concentrations ranging from 1.3 to 9.1 ug/L. Other compounds detected in at

least two of the on-site wells at concentrations greater than the quantitation limit of 1 ug/L (or 20 ug/L for SY-7) were vinyl chloride, 1,1-dichloroethane, cis-1,2-dichloroethene, trichloroethene, and tetrachloroethene.

In seven of the eight off-site wells, the total concentration of VOCs ranged from not detected in RB-11S (first sampling round) to 52.5 ug/L in RB-11I (second sampling round). However, the highest total concentration of VOCs occurred in Well RW-12I (259.7 ug/L). This detection of VOCs is several times higher than the highest concentration detected in the other monitoring wells on-site or off-site during either the OU-1 or OU-2 RIs and it appears that a source other than the landfill may exist (see Section 3.4 [Contaminant Migration]). Total VOC concentrations were less than 10 ug/L for samples collected from off-site wells PK-10D, RB-11S, and RB-11D for both sampling rounds. The compounds detected in samples collected from Well RW-12I for both sampling rounds above the quantitation limit (2 ug/L for the first round and 5 ug/L for the second round) were 1,1-dichloroethene, 1,1-dichloroethane, cis-1,2-dichloroethene, 1,1,1-trichloroethane, trichloroethene, and tetrachloroethene. The compound detected in Well RW-12I at the highest concentration was tetrachloroethene (110 ug/L) during the second sampling round. Tetrachloroethene was also detected in off-site Wells PK-10S, PK-10I, RB-11I, and RW-12D at concentrations ranging from 1.3 ug/L to 23 ug/L. Benzene was not detected in any of the off-site wells at concentrations above 1 ug/L. Chlorobenzene was only detected in off-site Well PK-10I above the quantitation limit (1 ug/L) at a concentration of 20 ug/L. Other compounds detected in at least two of the off-site wells at concentrations greater than the quantitation limit of 1 ug/L (or at least 2 ug/L for RW-12I) were 1,1-dichloroethene, 1,1-dichloroethane, cis-1,2-dichloroethene, 1,1,1-trichloroethane, trichloroethene, and toluene.

A few individual VOCs were detected in the trip blanks and field blanks analyzed. The VOCs detected in these blanks were primarily methylene chloride, acetone, and chloroform. These same compounds were also frequently detected in the laboratory method

blanks associated with the trip and field blanks. All blank results are taken into consideration when validating the data and a detailed discussion about blank contamination can be found in the Data Validation Summary Report.

3.2.2 Metals (Total and Dissolved)

As discussed in Section 2.1.11.1 (Revised Parameter List), both filtered and unfiltered samples were collected for metals analysis. The unfiltered samples were sent to the laboratory for analysis of total metals and the filtered samples were sent to the laboratory for analysis of dissolved metals. The total and dissolved metal sample results are summarized in Table 3-3. Overall, the results of both sampling rounds, including the field replicate samples, correlate very well both in terms of individual metals detected and their detected concentrations. The sample results for each metal were compared to either the New York State or federal drinking water standard (maximum contaminant level [MCL]), whichever value was lower. MCLs are included in Table 3-3; these values were used to assist in the evaluation of potential contamination both on- and off-site. Two of the 17 metals analyzed (sodium and nickel) presently do not have a corresponding MCL.

Except for iron, MCLs were not exceeded for any metals in the off-site wells, but antimony, arsenic, iron, and lead were detected in at least one of the on-site wells at concentrations above the corresponding MCL. Antimony was detected above the MCL (6 ug/L) on at least one occasion in six on-site wells at concentrations ranging from 21.0 to 91.8 ug/L. Dissolved antimony was only detected above the MCL in filtered samples collected from Wells SY-3 and SY-4. Arsenic was detected above the MCL (50 ug/L) on at least one occasion in two on-site wells (SY-3 and SY-3D) with concentrations up to 102 ug/L. Dissolved arsenic was not detected above the MCL in either well. Lead was detected above the MCL (50 ug/L) on at least one occasion in four on-site wells with total concentrations up to 128 ug/L; however, none of the dissolved lead concentrations detected in the on-site wells was above the MCL.

Antimony, beryllium, mercury, silver, and thallium were not detected in any of the off-site wells sampled during either sampling round. Of the metals that were detected in the off-site wells, only iron, detected in most of the samples, was detected at concentrations above the MCL.

A few metals (copper, zinc, and iron) were detected in the field blanks analyzed at concentrations above the reporting limit. All blank results were taken into consideration when validating the data, and a detailed discussion about blank contamination can be found in the Data Validation Summary Report.

3.2.3 Leachate Indicator Parameters

Groundwater samples were also analyzed for leachate indicator parameters as part of the Off-Site Groundwater Study. The leachate indicator parameters include naturally occurring anions and cations, some of which can be extremely useful in determining landfill leachate impacts to groundwater (ammonia, hardness, alkalinity, iron, sodium, potassium, total dissolved solids, nitrate, sulfate, and chloride). These parameters have been employed as indicator parameters for landfill leachate in several other investigations on Long Island (Geraghty & Miller, Inc. 1985 and 1989, Saar & Braids 1983). The leachate indicator parameter sample results are summarized in Table 3-4. Selected leachate indicator parameters detected and their corresponding concentrations for both sampling rounds are presented on Figures 3-13 (shallow zone), 3-14 (intermediate zone), and 3-15 (deep zone). Overall, the results of both sampling rounds, including the field replicate samples, correlate very well both in terms of individual leachate indicator parameters detected and their concentrations. A more detailed discussion of the leachate indicator parameter results is presented in Sections 3.3 (Contaminant Distribution) and 3.4 (Contaminant Migration).

3.3 CONTAMINANT DISTRIBUTION

In the following sections the areal distribution (on-site and off-site) of VOCs, leachate indicator parameters, and metals are discussed for the three hydrogeologic zones of the Magothy Formation (shallow, intermediate, and deep) and comparisons are made between the zones.

3.3.1 Shallow Zone

Figure 3-10 depicts VOC distribution and concentrations in the shallow zone for the November and December 1993 sampling rounds. Upgradient and downgradient (see figures for shallow groundwater zone flow directions) of the eastern half of the landfill, total VOC concentration in each shallow well sampled was 1.7 ug/L or less for both sampling rounds. The only exception to this was Well SY-7, where total VOCs, consisting predominantly of benzene (more than 500 ug/L), were detected during each sampling round. As stated previously, this detection is not considered a result of landfill impacts (see Section 3.54 [Contaminant Migration]).

Total VOC concentrations were slightly higher in wells located on the western portion of the landfill with all results, except for one, being above 10 ug/L, with a maximum of 23.2 ug/L in Well SY-8 during the first sampling round.

Off-site, the total VOC concentration in Well PK-10S (10.8 to 13.9 ug/L) is similar to total VOCs on the western half of the landfill, while the total VOC concentration in Well RB-11S (not detected to 0.9 ug/L) is similar to total concentrations on the eastern half of the landfill.

Figure 3-13 depicts the distribution and concentrations of leachate indicator parameters in the shallow zone during the November and December 1993 sampling rounds. Generally, the concentrations of leachate indicator parameters are higher in wells located

on the western portion of the landfill as compared to the eastern portion, although there are exceptions to the generalization. Most notably, the concentrations of some leachate indicator parameters, such as chloride and total dissolved solids, in Well SY-7 are at levels more comparable to wells on the western portion of the landfill. This general distribution of parameters relative to the western and eastern portions of the landfill is similar to that described above for VOCs.

Off-site, leachate indicator parameter concentrations are significantly less than on-site concentrations, unlike the total VOC distribution pattern; however, leachate indicator concentrations are similar to the total VOC pattern, being less in Well RB-11S than in Well PK-10S.

The only metal detected off-site above an MCL was iron. However, as iron is a natural constituent of aquifer materials and in groundwater on Long Island and occurs naturally at elevated levels, its distribution can be somewhat erratic.

3.3.2 Intermediate Zone

Figure 3-11 indicates the distribution and concentrations of VOCs in the intermediate zone in November and December 1993. Because of the limited number of data points on-site, it is not possible to discern whether concentrations are substantially different on the eastern portion of the landfill versus the western part. However, total VOC concentrations on-site are relatively low and are similar to the shallow zone, ranging in concentrations from not detected to 29.2 ug/L.

Off-site (unlike the shallow zone) at Wells RB-11I and PK-10I, total VOCs are slightly higher than on-site. The total VOCs in Well RW-12I is anomalously high with concentrations of 144.5 and 152.3 ug/L (replicate) during the first round, and 259.7 ug/L and 259.4 ug/L (replicate) during the second round. In fact, the total concentration of VOCs

in Well RW-12I is several times higher than any well sampled during either the OU-1 RI or the OU-2 RI, except for Well SY-7 in which VOCs are not believed to be landfill-derived.

Figure 3-14 displays concentrations and the distribution of leachate indicator parameters in the intermediate zone in November and December 1993. Concentrations in two of the three on-site downgradient wells (SY-1D and SY-3D) are substantially higher than concentrations in upgradient Well SY-6D, while downgradient Well SY-2D has concentrations similar to that of Well SY-6D. Leachate indicator concentrations in Well SY-3D on the western portion of the landfill are by far the highest of any on-site intermediate well.

Concentrations of leachate indicators in off-site Well PK-10I are substantially higher than in either of the other two off-site wells (RB-11I and RW-12I) and are similar to but less than concentrations in on-site Well SY-3D. Concentrations of leachate indicator parameters in Well RW-12I are in the range of concentrations found in downgradient on-site wells (with the exception of Well SY-3D), while concentrations in Well RB-11I are comparable with those found in upgradient on-site Well SY-6D.

The location of the highest off-site leachate indicator parameter concentrations (Well PK-10I) do not coincide with the location of the highest off-site concentration of total VOCs (Well RW-12I).

The only metal detected off-site above an MCL was iron. However, as iron is a natural constituent of aquifer materials and in groundwater on Long Island and occurs naturally at elevated levels, its distribution can be somewhat erratic.

3.3.3 Deep Zone

Figure 3-12 depicts VOC concentrations and distributions in the deep zone in November and December 1993. VOCs were not detected in on-site Well SY-3DD and were detected at 6.5 ug/L or less in Wells PK-10D and RB-11D. Well RW-12D had slightly higher total concentrations ranging from 16.4 ug/L (first sampling round) to 31.9 ug/L (second sampling round). The VOCs detected in RW-12D are likely derived from the same source(s) as the VOCs detected in RW-12I.

Figure 3-15 shows the distribution and concentration of leachate indicator parameters in the deep zone in November and December 1993. Concentrations in Wells SY-3DD (on-site) and in Wells RB-11D and PK-10D (both off-site) are all very low, while the concentrations in off-site Well RW-12D are substantially elevated compared to the other two off-site wells. The highest total VOC and leachate indicator concentrations in the deep zone both occur in Well RW-12D.

The only metal detected off-site above an MCL was iron. However, as iron is a natural constituent of aquifer materials and in groundwater on Long Island and occurs naturally at elevated levels, its distribution can be somewhat erratic.

3.3.4 Comparison of Zones

Total VOC concentrations generally are significantly higher in the intermediate zone as compared to the shallow and deep zones while concentrations are lowest in the deep zone.

Leachate indicator parameter concentrations are also lowest in the deep zone. The shallow and intermediate zones show variable values over the study area with the intermediate zone having the highest concentrations.

3.4 CONTAMINANT MIGRATION

As discussed in Sections 3.2.1 (Volatile Organic Compounds) and 3.3 (Contaminant Distribution), the highest total VOC concentrations detected during the OU-2 RI were detected in on-site Well SY-7 (511.7 ug/L [first sampling round] and 547.9 ug/L [second sampling round]). Well SY-7 is a shallow well that only had trace levels of VOCs detected in it during the OU-1 RI. Nearly all of the total VOC concentration in this well during both sampling rounds of the OU-2 RI consisted of benzene, a gasoline component. Well SY-7 is located adjacent to pump islands where gasoline is dispensed to Town vehicles. Beneath the pump islands are two underground storage tanks (USTs) supplying the gasoline. These two USTs were replaced in 1980 due to the age of the steel tanks and the potential for leakage. They were replaced with single wall fiberglass tanks which were last tested in 1992, complying with the requirements of the Nassau County Fire Marshall Article III regulations. These new USTs are now tested at a frequency of every 5 years. Based on this information, it seems that the VOCs detected in Well SY-7 are from the UST(s) that may have leaked in the past. This impact may be localized based on benzene concentrations in other wells.

Aside from Well SY-7, total VOC concentrations in the shallow zone on-site upgradient and downgradient of the landfill and downgradient off-site are relatively low, are very similar, and do not suggest the landfill as a source. Regional background degradation of groundwater appears to be the reason for the detected VOC concentrations.

Leachate indicator parameter concentrations (Figure 3-13) show impacts to groundwater on-site and these impacts extend off-site to Well PK-10S, but apparently not to Well RB-11S. Impacts at Well PK-10S are consistent with this well being directly downgradient of the area on-site with the highest leachate indicator concentrations (i.e., between Wells SY-3 and SY-2R). The leachate impacts at Well PK-10S, however, are significantly reduced as compared to on-site.

The only metal detected off-site above MCLs was iron, but as previously discussed, this metal occurs naturally and frequently at elevated levels on Long Island and, therefore, its use as an indicator of contamination is questionable. Therefore, this metal is not discussed further.

Examination of the intermediate zone groundwater flow maps (Figures 3-6 and 3-7) and the VOC distribution map (Figure 3-11) shows that Well PK-10I is downgradient of the landfill and the VOCs detected in this well are similar (type and concentration) to VOCs detected at the landfill, although they are slightly higher than total VOC concentrations found on-site. These concentrations are also consistent with regional degradation of underground water quality.

Well RW-12I is very close to (and possibly outside of) the westernmost limiting groundwater flowline for the landfill. The total concentrations of VOCs detected in this well are nearly an order of magnitude higher than any total VOC concentration found on-site or off-site in either the intermediate or the shallow zone. Constituent levels in groundwater would normally be expected to be highest at a source of contamination and then to progressively decrease further downgradient from the source; this is not the situation with Well RW-12I. Given the fact that Well RW-12I is located hydraulically downgradient of the western-most edge of the landfill, and adjacent to an industrial area located west of the LIRR tracks, the VOCs detected in this well may be derived from a source other than the landfill.

Well RB-11I is outside the easternmost limiting groundwater flow line from the landfill and, as such, the VOCs detected here would not be expected to have originated from the landfill and may be indicative of regional degradation of background water quality.

It is apparent from the data shown on Figure 3-14 that elevated concentrations of leachate indicator parameters exist off-site at Wells PK-10I, RB-11I, and RW-12I, suggesting that landfill-impacted groundwater has reached these locations. The greatest impacts are

at Well PK-10I, followed by Wells RW-12I and RB-11I, in decreasing order of impact. Although landfill leachate impacts are apparent at Well RW-12I, as stated above, this does not rule out the possibility of another source causing elevated VOC concentrations at this well. The leachate indicators detected in Well RB-11I indicate the landfill as the source. However, as stated above, RB-11I is outside the easternmost limiting groundwater flowline from the landfill.

A review of Figures 3-12 (VOCs) and 3-15 (leachate indicator parameters) in conjunction with the deep flow maps (Figures 3-8 and 3-9) indicates that the deep zone has not been impacted by the landfill on-site (Well SY-3DD) or at off-site Wells RB-11D or PK-10D. The leachate indicator parameter concentrations are low in the deep zone and reflect ambient (unimpacted) water quality. The total concentrations of VOCs in these two off-site wells range from not detected to 6.5 ug/L with most of the detections being estimated values. Because these values are low and predominately estimated, and because VOCs were not detected in the deep on-site well (SY-3DD), these VOC detections appear to be related to regional degradation of background water quality and are not landfill-derived.

Leachate indicator parameter concentrations at off-site Well RW-12D indicate impacts to the deep zone at this location from the landfill. VOCs in this well are likely derived from the same source as those detected in RW-12I; however, the concentrations (16.4 ug/L to 31.9 ug/L) are not inconsistent with regional degradation of background water quality .

The deepest continuous low-permeability unit (in the study area), below which all four deep wells are screened, appears to be preventing landfill-derived contaminants from migrating to the deep zone, except at Well RW-12D. At this location, the unit thins appreciably and this may be the reason why landfill-derived contaminants (leachate indicators and possibly VOCs) have been able to penetrate the unit here but not at other locations where it is thicker.

In summary, landfill-impacted groundwater has migrated to all three off-site well cluster locations (Recharge Basin [RB] wells, Town Park [PK] wells, and Roadway [RW] property wells). Due to the significantly steeper vertical hydraulic gradient with respect to the relatively flat horizontal hydraulic gradient, landfill-derived contaminants have moved off-site in groundwater into the intermediate zone. The greatest impacts off-site are in the intermediate zone, whereas impacts to the deep zone were observed only at the Roadway property. The deepest continuous low-permeability unit identified in this study area has prevented migration of landfill-derived contaminants to the deep zone, except at Well RW-12D, where this unit is thinner.

3.5 OFF-SITE SUBSURFACE GAS

A summary of the results of the OU-2 landfill gas monitoring is presented in Table 3-5. These data indicate that landfill gases were detected at elevated concentrations (primarily methane) in one of the gas monitoring wells in the southwestern part of the landfill (G-7) and are consistent with the findings of the OU-1 RI. Landfill gas was not detected in the off-site gas monitoring wells and does not appear to be migrating off-site. (See Appendix K for the results of gas monitoring conducted separately by LKB as part of the OU-1 Remedial Design Program.)

4.0 CONCLUSIONS

Based on the results of the OU-2 RI, the following conclusions were developed.

4.1 OFF-SITE GROUNDWATER STUDY

1. Hydrogeologic conditions encountered during the OU-2 RI are generally consistent with conditions found during the OU-1 RI and published data except that two low-permeability units were encountered in the Magothy Formation that appear to be continuous over the study area.

2. The deepest low-permeability unit appears to have prevented the movement of landfill-derived contaminants into the deep zone except at off-site Well RW-12D; at this location, the unit is thinner.

3. The regional potentiometric surface map of the shallow zone of the Magothy Formation indicates that the position and orientation of the regional groundwater divide is virtually the same as it was during the OU-1 RI and is south of the landfill. Regional shallow groundwater flow was documented to be in a north-northeasterly direction near the site, which is also consistent with the OU-1 RI findings.

4. The site-specific horizontal direction of groundwater flow in the shallow, intermediate, and deep zones of the Magothy Formation is generally to the north. However, in the shallow zone on-site, groundwater also flows from the west and east parts of the site toward the center of the landfill before moving north toward the Town Park.

5. The direction of the vertical hydraulic gradient is predominately downward in the study area. The vertical hydraulic gradient is approximately four times steeper than the horizontal hydraulic gradient; this is consistent with the proximity of the site to the regional groundwater divide.

6. Landfill-impacted groundwater has migrated to all three off-site well cluster locations (Recharge Basin, Town park, and Roadway property) particularly in the intermediate zone of the Magothy Formation. The significantly steeper vertical hydraulic gradient, as compared to the horizontal gradient, has resulted in landfill-derived contaminants moving off-site into this zone.

7. The only impacts to the deep zone are at the Roadway property.

8. The total concentrations of VOCs in off-site intermediate wells at the Town Park (PK-10I) and at the Recharge Basin (RB-11I) are consistent with the total VOC concentrations detected in the on-site shallow monitoring wells. These concentrations are also consistent with regional background degradation of groundwater quality. In particular, this is true for Well RB-11I, which is located outside the easternmost limiting groundwater flowline from the landfill.

9. The total concentration of VOCs in RW-12I is anomalously high, several times higher than in any other monitoring well during either the on-site or off-site RIs. Given the fact that RW-12I is located hydraulically downgradient of the westernmost edge of the landfill, and adjacent to an industrial area located west of the LIRR tracks, the VOCs detected in this well may be derived from a source other than the landfill. The VOCs detected in Well RW-12D are likely derived from the same source as the VOCs detected in Well RW-12I.

4.2 SUBSURFACE GAS STUDY

1. Landfill gas (primarily methane) was detected at elevated concentrations in one of the gas wells on the southwestern part of the landfill and is consistent with the findings of the OU-1 RI. Landfill gas was not detected in the three new off-site subsurface gas monitoring wells and does not appear to be migrating off-site. (See Appendix K for the results of gas monitoring conducted separately by LKB as part of the OU-1 Remedial Design Program.)

5.0 RECOMMENDATIONS

1. A reconnaissance should be made of the industrial area west of the LIRR tracks adjacent to Well Cluster RW-12 to identify potential off-site contaminant source areas.

2. The New York State Department of Environmental Conservation files should be accessed via a Freedom of Information Act (FOIA) request. Any data pertaining to environmental investigations carried out at sites identified as a result of the first recommendation should be evaluated in view of the water-quality data for Well RW-12I.

3. Off-site wells at the Roadway property (RW-12I and RW-12D) should be monitored quarterly for VOCs for a period of 1 year. At the end of this period, the analytical data should be evaluated.

NY0029.099\#07:ri.rpt

6.0 REFERENCES

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Glasser, V.J. and Wolfert, M.F. Geraghty & Miller, Inc. Letter to J.P. Lekstutis, P.E., Vice President, Lockwood, Kessler & Bartlett, Inc., April 1, 1993.

Table 2-1. Summary of Field and Laboratory Measurements of Leachate Parameters of Groundwater Samples Collected During Drilling of Exploratory Borings SY-3DD and PK-10D During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

			Primary Leachate Parameters			Secondary Leachate Parameters			
Sample Depth (feet)	Date Sampled	Action Level (a):	Alkalinity (mg/L) 11	Total Hardness (mg/L) 43	Ammonia (mg/L) 0.12	Conductivity (umhos/cm) 217	pH (units) 5.75	Chloride (mg/L) 19	Temperature (Celcius) 14.5
Well SY-3DD									
118	11/5/92		(c)	39	23	280	5.05	28	15
137	11/5/92		190	140	21	640	6.35	36	15
158	11/6/92		390	170	71	960	6.35	54	15
179	11/6/92		840	380	160	1,600	6.95	120	15
192	11/6/92		630	280	120	1,200	7.35	26	15
218	11/6/92		910	300	420	2,000	7.85	22	15
239	11/9/92		890	400	150	2,400	7.35	100	15
256	11/9/92		540	330	200	1,900	7.05	180	15
279	11/9/92		440	310	180	1,900	7.10	240	15
299	11/9/92		500	280	160	1,700	6.10	270	15
318	11/10/92		430	270	220	2,300	6.55	490	15
335	11/17/92		360	200	(b)	2,200	7.87	390	15
355	11/17/92		31	220	(b)	1,200	7.90	190	15
355 (d)	11/17/92		31.7	211	11.4	NA	NA	200	NA
375	11/17/92		38	(c)	(b)	1,600	4.80	(c)	15
375 (d)	11/17/92		41.6	231	19.1	NA	NA	271	NA
395	11/17/92		70	210	(b)	1,200	7.20	230	15
395 (d)	11/17/92		76.4	174	21.0	NA	NA	222	NA
417	11/18/92		48	250	5.0	1,500	7.80	270	15
437	11/18/92		52	240	4.0	1,200	7.70	220	15

See last page for footnotes.

Table 2-1. Summary of Field and Laboratory Measurements of Leachate Parameters of Groundwater Samples Collected During Drilling of Exploratory Borings SY-3DD and PK-10D During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

			Primary Leachate Parameters			Secondary Leachate Parameters			
Sample Depth (feet)	Date Sampled	Action Level (a):	Alkalinity (mg/L) 11	Total Hardness (mg/L) 43	Ammonia (mg/L) 0.12	Conductivity (umhos/cm) 217	pH (units) 5.75	Chloride (mg/L) 19	Temperature (Celcius) 14.5
Well SY-3DD (Continued)									
457	11/18/92		80	240	2.4	1,100	7.70	180	15
480	11/25/92		66	180	2.6	920	7.70	150	15
500	11/30/92		15	23	0.41	56	7.40	15	15
520	12/1/92		9.7	9.0	0.29	58	7.20	4.9	15
520 (e)	12/1/92		12	6.9	<0.05	NA	NA	6	NA
520**	12/1/92		10	8.1	0.16	57	7.20	4.8	15
540	12/1/92		13	12	<0.06	52	6.80	5.2	15
PK-10D									
120	12/15/92		(b)	(b)	(b)	(b)	(b)	(b)	(b)
140	12/15/92		5.5	59	<0.06	240	7.45	14	15
160	12/15/92		13	59	<0.06	240	7.25	17	15
180	12/15/92		37	39	<0.06	180	7.15	14	15
200	12/15/92		39	92	<0.06	340	5.25	18	15
220	12/15/92		(b)	(b)	(b)	(b)	(b)	(b)	(b)
240	12/15/92		44	78	<0.06	400	5.45	42	15
260	12/16/92		(c)	(c)	(c)	(c)	(c)	(c)	15
280	12/16/92		37	93	0.17	500	7.55	47	15
280(e)	12/16/92		33.7	92.2	0.65	NA	NA	46.8	NA
300	12/16/92		18	63	0.08	300	7.10	26	15
300 (d)	12/16/92		16	58	0.07	290	7.15	23	15

See last page for footnotes.

Table 2-1. Summary of Field and Laboratory Measurements of Leachate Parameters of Groundwater Samples Collected During Drilling of Exploratory Borings SY-3DD and PK-10D During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

			Primary Leachate Parameters			Secondary Leachate Parameters			
Sample Depth (feet)	Date Sampled	Action Level (a):	Alkalinity (mg/L) 11	Total Hardness (mg/L) 43	Ammonia (mg/L) 0.12	Conductivity (umhos/cm) 217	pH (units) 5.75	Chloride (mg/L) 19	Temperature (Celcius) 14.5
PK-10D (Continued)									
300(e)	12/16/92		15	58.6	0.10	NA	NA	23.3	NA
320	12/16/92		66	47	6.2	750	7.65	68	15
340	12/16/92		250	220	19	1,670	7.45	(e)	15
360	12/17/92		370	310	24	2,000	7.55	360	15
380	12/18/92		220	278	19	2,100	7.90	439	15
400	12/18/92		150	210	9.9	1,600	7.70	350	15
420	12/21/92		46	120	8.6	720	7.15	140	15
440	12/21/92		6.6	75	<0.06	400	6.25	76	15
460	12/22/92		6.8	160	0.08	920	7.10	160	15
479	12/28/92		6.1	7.6	0.07	50.6	6.80	11.2	15
479(e)	12/28/92		<1.0	62.2	0.09	NA	NA	7.53	NA
499	12/28/92		9.1	16	0.07	74	7.0	13	15
499(e)	12/28/92		9.9	12.8	0.51	NA	NA	14.5	NA
Hydrant Water	11/6/92		39	47	30	200	4.90	16	15
Hydrant Water	12/1/92		45	33	0.14	180	8.70	15	15
Hydrant Water	12/17/92		31	13	<0.06	160	8.20	8.7	15

mg/L Milligrams per liter.
umhos/cm Micromhos per centimeter.
(a) Based on statistical analysis of background water-quality data.
(b) Probe malfunction.
(c) Not enough sample collected for all analyses.
(d) Replicate sample analyzed by IEA, Inc., Monroe, Connecticut.
(e) Replicate sample analyzed by EcoTest Laboratories, Inc., North Babylon, New York.
** Field replicate.
NA Not analyzed.

Table 2-2. Summary of Construction Details of New and Preexisting Monitoring Wells Installed at and near the Syosset Landfill, Syosset, New York.

Well Designation	Completion Date	Well Diameter (inches)	Total Depth (feet below land surface)	Screen Setting (feet below land surface)	Interval Gravel Packed (feet below land surface)	Interval Sealed With Bentonite Pellets (feet below land surface)	Interval Sealed With Bentonite Slurry/Volclay (feet below land surface)	Height of Measuring Point (a) (relative to land surface)	Elevation of Measuring Point (b) (feet above mean sea level)	Well Casing and Screen Material
SY-1 (c)	10/19/82	2	135	125 - 135 (d)	35 - 135 (d)	34 - 35	8 - 34 (e)	-0.15	194.52	Black steel
SY-1D	2/2/88	4	218	182 - 192	179 - 218	177 - 179	2 - 177	+2.31	197.36	PVC
SY-2R	2/12/88	4	150	115 - 125	112 - 150	110 - 112	2 - 110	+1.95	187.12	PVC
SY-2D	2/9/88	3	215	190 - 200	187 - 215	185 - 187	2 - 185	+2.18	186.33	PVC
SY-3 (c)	10/20/82	2	145	135 - 145	47 - 145 (d)	45 - 47	4 - 45 (e)	-0.50	191.38	Black steel
SY-3D	2/25/88	3	240	189 - 199	184 - 240	181 - 184	2 - 181	+2.45	194.74	PVC
SY-3DD	**12/9/92**	**2**	**540**	**530 - 540**	**517 - 540**	**512 - 517 (f)**	**2 - 512**	**0**	**194.23**	**PVC, stainless steel**
SY-4	10/20/82	2	153	143 - 153 (d)	57 - 153 (d)	54 - 57	4 - 54 (e)	-0.20	193.32	Black steel
SY-5 (c) (h)	10/20/82	2.5	135	125 - 135 (d)	46 - 135 (d)	44 - 46	5 - 44 (e)	+4.20	188.07	Galvanized steel
SY-6 (c)	10/19/82	2	145	135 - 145 (d)	31 - 145 (d)	28 - 31	5 - 28 (e)	-0.10	185.92	Black steel
SY-6D	3/9/88	4	215	195 - 205	192 - 215	190 - 192	3 - 192	-0.30	185.60	PVC
SY-7 (c)	10/21/82	2	145	135 - 145 (d)	52 - 145 (d)	49 - 52	5 - 49 (e)	-0.25	197.46	Black steel
SY-8	12/19/87	4	142	127 - 137	125 - 142	122 - 125	2 - 122	+2.25	195.84	PVC
SY-9	1/29/88	4	140	110 - 120	107 - 140	105 - 107	2 - 105	-0.70	199.41	PVC
W-3	11/10/87	2	120	105 - 115	102 - 120	100 - 102	2 - 100	+2.63	190.61	PVC
W-4 (h)	11/18/87	2	120	104 - 114	102 - 120	100 - 102	2 - 100	+2.56	192.82	PVC
PK-10S	**3/25/93**	**4**	**149**	**139 - 149**	**5 - 149**	**(i)**	**(i)**	**-0.40**	**188.70**	**PVC, stainless steel**
PK-10I	**4/14/93**	**4**	**362**	**352 - 362**	**346.5 - 363**	**341.5 - 346.5 (f)**	**2 - 341.5 (g)**	**0**	**187.62**	**PVC, stainless steel**
PK-10D	**12/31/92**	**4**	**499**	**489 - 499**	**477 - 500**	**472 - 477 (f)**	**2 - 472 (g)**	**0**	**188.23**	**PVC, stainless steel**
RB-11S	**8/26/93**	**4**	**143**	**133 - 143**	**120 - 144**	**116 - 120 (f)**	**2 - 116 (g)**	**0**	**189.91**	**PVC, stainless steel**
RB-11I	**8/19/93**	**4**	**358.5**	**348.5 - 358.5**	**339 - 359**	**333 - 339 (f)**	**2 - 333 (g)**	**0**	**190.32**	**PVC, stainless steel**
RB-11D	**8/9/93**	**4**	**503**	**493 - 503**	**487 - 509**	**480 - 487 (f)**	**2 - 480 (g)**	**0**	**190.60**	**PVC, stainless steel**
RW-12I	**10/7/93**	**4**	**360**	**350 - 360**	**338 - 364**	**330 - 338 (f)**	**2 - 330 (g)**	**0**	**197.76**	**PVC, stainless steel**
RW-12D	**9/27/93**	**4**	**500**	**490 - 500**	**482 - 508**	**476 - 482 (f)**	**2 - 482 (g)**	**0**	**197.72**	**PVC, stainless steel**

(a) The measuring point of each well is the top of the well casing.
(b) Survey performed to U.S. Geological Survey (USGS) datum.
(c) Well installed during the ERM-Northeast site investigation.
(d) It appears that this interval consists of formation collapse.
(e) Information not available as to whether grout or backfill (drill cuttings) was used to fill the annular space in this interval.
(f) #00 Sand used above J. Morie, Co. No. 1 Sand.
(g) Volclay grout sealant used (composed of 100 percent bentonite).
(h) Destroyed.
(i) Well PK-10S was installed in the initial PK-10I borehole, which had collapsed at 328 feet due to unstable formation; PK-10S was constructed with the gravel pack extending to within 5 feet of land surface to allow for the gravel pack to stabilize before a permanant seal was installed. PK-10S is currently sealed at the land surface with a steel plate and rubber gasket. Gravel can be monitored/added through a 1-inch diameter access port.
PVC Polyvinyl chloride.

Information for monitoring wells installed during the second operable unit remedial investigation is indicated in bold letters.

Table 2-4. Summary of Water-Level Elevation Data Collected on October 29, 1993 from Nassau County Monitoring Wells Within Approximately 2 Miles of the Syosset Landfill During the Second Operable Unit Remedial Investigation, Syosset, New York.

Well Number	Elevation of Measuring Point (feet above mean sea level)	Depth to Water (feet below measuring point)	Water-Level Elevation (feet above mean sea level)
O-6A	140.42	64.27	76.15
O-7A	228.24	(a)	(a)
O-8	167.98	87.45	80.53
O-9	148.30	71.66	76.64
OP-1	168.18	86.57	81.61
OP-2	145.21	24.88 (b)	120.33
OP-3	161.68	85.38	76.30
P-7A	187.86	107.44	80.42
P-8A	174.49	95.00	79.49
P-9B	145.95	71.72	74.23
PT-1A	190.18	107.57	82.61
PT-2	178.97	98.94	80.03
PT-3	165.66	88.61	77.05
PT-4	145.54	73.42	72.12
T-5	227.12	164.82	62.30
T-6A	238.68	164.96	73.72
T-8	138.95	65.00	73.95
TU-1	173.93	96.30	77.63

(a) Not recorded.
(b) Water level is anomalously high and was not used to contour the potentiometric surface map (Figure 3-2); well screen is likely plugged.

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Table 2-5. Summary of Water-Level Elevation Data Collected from Site Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Well Number	Elevation of Measuring Point (feet above mean sea level)	November 24, 1993	
		Depth to Water (feet below measuring point)	Water-Level Elevation (feet above mean sea level)
Shallow			
SY-1	194.52	113.49	81.03
SY-2R	187.12	106.23	80.89
SY-3	191.38	110.13	81.25
SY-4	193.32	111.61	81.71
SY-5	188.47	(a)	(a)
SY-6	185.92	104.49	81.43
SY-7	197.46	115.63	81.83
SY-8	195.84	114.17	81.67
SY-9	199.41	117.00	82.41
W-3	190.61	108.89	81.72
W-4	(a)	(a)	(a)
PK-10S	188.70	108.49	80.21
RB-11S	189.91	109.38	80.53
Intermediate			
SY-1D	197.36	116.08	81.28
SY-2D	186.33	105.64	80.69
SY-3D	194.74	114.12	80.62
SY-6D	185.60	104.48	81.12
PK-10I	187.62	107.87	79.75
RB-11I	190.32	110.45	79.87
RW-12I	197.76	117.87	79.89
Deep			
SY-3DD	194.23	113.97	80.26
PK-10D	188.23	108.38	79.85
RB-11D	190.60	110.95	79.65
RW-12D	197.72	118.02	79.70

(a) Destroyed.

Table 2-5. Summary of Water-Level Elevation Data Collected from Site Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Well Number	Elevation of Measuring Point (feet above mean sea level)	October 28, 1993	
		Depth to Water (feet below measuring point)	Water-Level Elevation (feet above mean sea level)
Shallow			
SY-1	194.52	113.36	81.86
SY-2R	187.12	106.17	80.95
SY-3	191.38	110.03	81.35
SY-4	193.32	111.45	81.87
SY-5	188.47	(a)	
SY-6	185.92	104.32	81.60
SY-7	197.46	115.71	81.75
SY-8	195.84	114.05	81.79
SY-9	199.41	116.77	82.64
W-3	190.61	108.97	81.64
W-4	(a)	(a)	(a)
PK-10S	188.70	108.41	80.29
RB-11S	189.91	109.12	80.79
Intermediate			
SY-1D	197.36	115.97	81.39
SY-2D	186.33	105.61	80.72
SY-3D	194.74	114.05	80.69
SY-6D	185.60	104.05	81.55
PK-10I	187.62	107.80	79.82
RB-11I	190.32	110.38	79.94
RW-12I	197.76	117.84	79.92
Deep			
SY-3DD	194.23	113.99	80.24
PK-10D	188.23	108.41	79.82
RB-11D	190.60	111.97	78.63
RW-12D	197.72	117.98	79.74

(a) Destroyed.

Table 2-3. Summary of Survey Data, Syosset Landfill, Syosset, New York.

Well	Measuring Point Elevation (feet mean sea level)	New York State Plane Coordinate North	New York State Plane Coordinate East
SY-1	194.52	**209495.76**	**2136314.26**
SY-1D	197.36	**209481.59**	**2136330.22**
SY-2R	**187.12**	**210037.91**	**2135556.27**
SY-2D	**186.33**	**210026.07**	**2135587.51**
SY-3	191.38	**210242.45**	**2135067.38**
SY-3D	194.74	**210247.23**	**2135050.56**
SY-3DD	**194.23**	**210271.1702**	**2135002.6670**
SY-4	193.32	**209431.71**	**2134825.53**
SY-5	188.07	**209352.90**	**2135546.93**
SY-6	**185.92**	**208841.74**	**2135686.91**
SY-6D	185.60	**208859.37**	**2135654.79**
SY-7	**197.46**	**208673.74**	**2136465.21**
SY-8	195.84	**210046.93**	**2134479.52**
SY-9	199.41	**209095.12**	**2136455.36**
W-3	**190.61**	**210002.45**	**2135019.45**
W-4	192.82	**209339.17**	**2135850.95**
PK-10S	**188.70**	**210812.2387**	**2135658.6336**
PK-10I	**187.62**	**210720.9698**	**2135615.3518**
PK-10D	**188.23**	**210803.3541**	**2135650.1901**
RB-11S	**189.91**	**210943.6133**	**2136483.3404**
RB-11I	**190.32**	**210938.5300**	**2136465.6332**
RB-11D	**190.60**	**210935.7024**	**2136455.7611**
RW-12I	**197.76**	**210856.6549**	**2134537.6926**
RW-12D	**197.72**	**210880.6908**	**2134539.2033**

Survey performed by Lockwood, Kessler & Bartlett, Inc. (LKB), Syosset, New York.

Information in bold is for measurements made by LKB in October 1993.

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Table 2-6. Parameter List for the Second Operable Unit Remedial Investigation Groundwater Sampling Program, Syosset Landfill, Syosset, New York.

Volatile Organic Compounds	Metals
Dichlorodifluoromethane (a)	Antimony
Chloromethane	Arsenic
Vinyl chloride	Barium
Bromomethane	Beryllium
Chloroethane	Cadmium
Trichlorofluoromethane (a)	Chromium
1, 1-Dichloroethene	Copper
Acetone (b)	Iron
Carbon Disulfide (b)	Lead
Methylene chloride	Mercury
trans-1, 2-Dichloroethene	Nickel
1,1-Dichloroethane	Potassium
2-Butanone (b)	Selenium
cis-1, 2-Dichloroethene (b)	Silver
Chloroform (b)	Sodium
1, 1, 1-Trichloroethane	Thallium
Carbon tetrachloride	Zinc
Benzene	
1, 2-Dichloroethane	**Leachate Indicator Parameters**
Trichloroethene	
1, 2-Dichloropropane	Specific conductance (field)
Bromodichloromethane	pH (field)
2-Chloroethyl vinyl ether	Chloride
cis-1, 3-Dichloropropene	Nitrate
4-Methyl-2-Pentanone (b)	Ammonia
Toluene	Hardness
trans-1, 3-Dichloropropene	Bicarbonate
1, 1, 2-Trichloroethane	Carbonate
Tetrachloroethene	Sulfate
2-Hexanone (b)	Total dissolved solids
Dibromochloromethane	
Chlorobenzene	
Ethylbenzene	
m&p -Xylene (b)	
o-Xylene (b)	
Styrene(b)	
Bromoform	
1, 1, 2, 2-Tetrachloroethane	

(a) This compound was deleted from the priority pollutant list.

(b) This compound was not included on the revised parameter list but was also analyzed. In May and June 1993, samples were collected by Geraghty & Miller, Inc. from Well Pk-10I for analysis of volatile organic compounds (VOCs). The laboratory analyzed these samples for the VOCs on the original parameter list included in the OU-2 RI Work Plan. However, because the laboratory (IEA Laboratories, Inc.) calibrates its analytical instruments for VOCs using commercial standards that contain a comprehensive list of VOCs that include more compounds than are contained in the parameter list, some of these additional VOCs were detected in this sample. This is the reason why these additional compounds were reported and included in this Table.

Table 2-7. Summary of Construction Details for Gas Monitoring Wells, Syosset Landfill, Syosset, New York.

Well No.	Date Installed	Diameter of Well (inches)	Total Depth of Boring (feet below land surface)	Depth to Landfill Material (feet below land surface)	Screen Interval (feet below land surface)	Sand Packed Interval (feet below land surface)	Grouted Interval (feet below land surface)	Casing Stick Up (feet above land surface)
On-Site Wells								
G-8	4/23/87	1	5.1	--	2.0 - 5.0	1.2 - 5.1	0 - 1.2	1.15
G-10	4/23/87	1	4.5	3	1.4 - 4.4	1.0 - 4.5	0 - 1.0	1.75
G-11	4/23/87	1	4.0	--	1.4 - 4.0	1.0 - 4.0	0 - 1.0	1.55
G-13	4/24/87	1	4.6	--	1.6 - 4.6	1.2 - 4.6	0 - 1.2	1.60
G-14	4/27/87	1	4.7	--	1.7 - 4.7	1.2 - 4.7	0 - 1.2	1.50
Off-Site Wells								
CS-20	9/28/93	1	4.7	--	2.1 - 4.7	1.6 - 4.7	1.0 - 1.6	none
CS-21	9/28/93	1	5.0	--	2.6 - 5.0	2.6 - 5.0	1.6 - 2.1	none
CS-22	9/29/93	1	4.25	--	1.5 - 4.25	1.1 - 4.25	0.6 - 1.1	none

-- Landfill material not encountered.

Table 3-1. Summary of Vertical Hydraulic Gradient Data, Second Operable Unit Remedial Investigation of the Syosset Landfill, Syosset, New York.

Well No.	Elevation of Top of Screen (feet, mean sea level)	Difference (Distance) Between the Top of Well Screen for Cluster Wells (feet)	October 28, 1993 Water-Level Elevation (feet, mean sea level)	October 28, 1993 Difference in Water-Level Elevation Between Cluster Wells (feet)	October 28, 1993 Vertical Hydraulic Gradient (feet/feet)	November 24, 1993 Water-Level Elevation (feet, mean sea level)	November 24, 1993 Difference in Water-Level Elevation Between Cluster Wells (feet)	November 24, 1993 Vertical Hydraulic Gradient (feet/feet)
SY-1	69.67	56.62	81.86	-0.47	-0.0083	81.03	+0.25	+0.0044
SY-1D	13.05		81.39			81.28		
SY-2R	70.53	76.14	80.95	-0.23	-0.0030	80.89	-0.20	-0.0026
SY-2D	-5.61		80.72			80.69		
SY-3	56.88	53.64	81.35	-0.66	-0.0123	81.25	-0.63	-0.0117
SY-3D	3.24	339.01	80.69	-0.45	-0.0013	80.62	-0.36	-0.0010
SY-3DD	-335.77		80.24			80.26		
SY-6	51.02	60.12	81.60	-0.05	-0.00083	81.43	-0.31	-0.0052
SY-6D	-9.10		81.55			81.12		
PK-10S	50.10	212.94	80.29	-0.47	-0.0022	80.21	-0.46	-0.0022
PK-10I	-162.34	138.43	79.82	0	0	79.75	+0.10	+0.0007
PK-10D	-300.77		79.82			79.85		
RB-11S	56.96	209.14	80.79	-0.85	-0.0041	80.53	-0.66	-0.0032
RB-11I	-152.18	150.22	79.94	-1.31	-0.0087	79.87	-0.22	-0.0015
RB-11D	-302.40		78.63			79.65		
RW-12I	-152.24	140.04	79.92	-0.18	-0.0013	79.89	-0.19	-0.0014
RW-12D	-292.28		79.74			79.70		

\+ Indicates an upward vertical hydraulic gradient.
\- Indicates a downward vertical hydraulic gradient.

Table 3-2. Concentrations of Volatile Organic Compounds Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	SY-1	SY-1	SY-1D	SY-1D	SY-2R	SY-2R
Sample Date:	11/3/93	11/30/93	11/4/93	12/1/93	11/2/93	12/3/93
Parameter (concentrations in ug/L)						
Dichlorodifluoromethane	<1	<1	<1	1.4 J	<1	<1
Chloromethane	<1	<1	<1	<1	0.5 J	<1
Vinyl chloride	<1	<1	1.6	1.4 J	<1	<1
Bromomethane	<1	<1	<1 J	<1	<1	<1
Chloroethane	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	0.1 J	<1	<1	<1
Acetone	<38 J	<25 J	<25 J	<26 J	<14 J	<27 J
Carbon disulfide	<1	<1	<1	<1	<1	<1 J
Methylene chloride	<2	<2	<2	<2	<2	<2
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	2.9	2.4	<1	<1
2-Butanone	R	R	R	R	R	R
cis-1,2-Dichloroethene	<1	<1	6.4	4.2	<1	<1
Chloroform	<1	<1	9.1	5.9	<1	<1
1,1,1-Trichloroethane	<1	<1	<1	<1	0.2 J	0.2 J
Carbon tetrachloride	<1	<1	<1	<1	<1	<1
Benzene	<1	<1	0.6 J	0.5 J	<1	<1
1,2-Dichloroethane	<1	<1	<1	1.7	<1	<1
Trichloroethene	<1	<1	1.3	1.1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1
2-Chloroethylvinylether	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone	<5	<5	<5	<5	<5	<5
Toluene	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1
Tetrachloroethene	<1	<1	2.4	1.7	0.4 J	0.4 J
2-Hexanone	<5	R	<5	R	<5	R
Dibromochloromethane	<1	<1	<1	<1	<1	<1
Chlorobenzene	<1	<1	4.8	3.7	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1	<1
meta and/or para-Xylene	<1	<1	<1	<1	<1	<1
ortho-Xylene	<1	<1	<1	<1	<1	<1
Styrene	<1	<1	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1
Total VOCs:	**0**	**0**	**29.2**	**24**	**1.1**	**0.6**

ug/L Micrograms per liter.
VOCs Volatile organic compounds.
J Estimated value.
B Compound was also detected in the associated method blank.
R Unusable value.

Table 3-2. Concentrations of Volatile Organic Compounds Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	SY-2D	SY-2D	SY-3	SY-3	SY-3D	SY-3D
Sample Date:	11/2/93	12/3/93	11/2/93	12/3/93	11/2/93	12/3/93
Parameter (concentrations in ug/L)						
Dichlorodifluoromethane	<1	0.2 J	<1	<1	<1	<1
Chloromethane	<1	<1	0.4 J	<1	<1	<1
Vinyl chloride	<1	<1	2.4 J	2.2	0.6 J	0.6 J
Bromomethane	<1	<1	<1 J	<1	<1	<1
Chloroethane	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	0.5 J	0.7 J	<1	0.3 J	<1	<1
Acetone	<29 J	<43 J	<18 J	<26 J	<17 J	<21
Carbon disulfide	<1	<1	<1	<1	<1	<1
Methylene chloride	<2	<2	<2.4	<2	<2	<2
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	2.1	3.6	2.3	2.5	1.5	1.6
2-Butanone	R	R	R	R	R	R
cis-1,2-Dichloroethene	0.2 J	0.2 J	1.6	1.2	0.7 J	0.6 J
Chloroform	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	0.7 J	1.4	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1
Benzene	<1	<1	0.6 J	0.6 J	1.8	1.8
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1
Trichloroethene	0.4 J	0.7 J	1.5	1.6	0.9 J	0.9 J
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1
2-Chloroethylvinylether	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone	<5	<5	<5	<5	<5	<5
Toluene	0.2 J	<1	0.5 J	0.1 J	0.4 J	0.2 J
trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1
Tetrachloroethene	0.5 J	0.5 J	<1	<1	<1	<1
2-Hexanone	<5	R	R	R	<5	R
Dibromochloromethane	<1	<1	<1	<1	<1	<1
Chlorobenzene	0.4 J	0.6 J	2.3	2.2	5.5	5.4
Ethylbenzene	<1	<1	<1	<1	<1	<1
meta and/or para-Xylene	0.08 J	<1	<1	<1	<1	<1
ortho-Xylene	<1	<1	<1	<1	<1	<1
Styrene	<1	<1	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1
Total VOCs:	5.08	7.9	11.6	10.7	11.4	11.1

ug/L Micrograms per liter.
VOCs Volatile organic compounds.
J Estimated value.
B Compound was also detected in the associated method blank.
R Unusable value.

Table 3-2. Concentrations of Volatile Organic Compounds Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	SY-3DD	SY-3DD	SY-4	SY-4	SY-6	SY-6
Sample Date:	11/1/93	11/29/93	11/2/93	12/3/93	11/5/93	12/2/93
Parameter (concentrations in ug/L)						
Dichlorodifluoromethane	<1	<1	<1	<1	<1 J	<1
Chloromethane	<1 J	<1	<1	<1	<1	<1
Vinyl chloride	<1	<1	**0.7 J**	**0.7 J**	<1	<1
Bromomethane	<1 J	<1	<1	<1	<1	<1 J
Chloroethane	<1	<1	<1	<1	<1	<1 J
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1
Acetone	<29 J	<52 J	<14 J	<24 J	<37 J	<27 J
Carbon disulfide	<1	<1 J	<1	<1 J	<1	<1 J
Methylene chloride	<2	<2	<2	<2	<2	<2
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	**1.4**	**1.8**	<1	<1
2-Butanone	R	R	R	R	R	R
cis-1,2-Dichloroethene	<1	<1	**0.6 J**	**0.4 J**	<1	<1
Chloroform	<1	<1	<2.7	<1.1	<1	<1
1,1,1-Trichloroethane	<1	<1	<1	<1	**0.1 J**	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1
Benzene	<1	<1	**0.7 J**	**0.8 J**	<1	<1
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1
Trichloroethene	<1	<1	**0.1 J**	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1
2-Chloroethylvinylether	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone	<5	<5	<5	<5	<5	<5
Toluene	<1	<1	<1	**0.2 J**	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1
Tetrachloroethene	<1	<1	<1	<1	**0.2 J**	<1
2-Hexanone	R	R	<5	R	<5	R
Dibromochloromethane	<1	<1	<1	<1	<1	<1
Chlorobenzene	<1	<1	**8.0**	**9.1**	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1	<1
meta and/or para-Xylene	<1	<1	<1	<1	<1	<1
ortho-Xylene	<1	<1	<1	<1	<1	<1
Styrene	<1	<1	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1	<1 J	<1
Trichlorofluoromethane	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1
Total VOCs:	**0**	**0**	**11.5**	**13**	**0.3**	**0**

ug/L Micrograms per liter.
VOCs Volatile organic compounds.
J Estimated value.
B Compound was also detected in the associated method blank.
R Unusable value.

Table 3-2. Concentrations of Volatile Organic Compounds Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	SY-6D	SY-6D	SY-7	SY-7	SY-8	SY-8
Sample Date:	11/1/93	11/29/93	11/4/93	12/2/93	11/4/93	12/1/93
Parameter (concentrations in ug/L)						
Dichlorodifluoromethane	<1	<1 J	<20 J	<20	<1 J	<1
Chloromethane	<1 J	<1	<20	<20	<1	<1
Vinyl chloride	<1	<1	<20	<20	<1	<1
Bromomethane	<1 J	<1	<20	<20	<1 J	<1
Chloroethane	<1	<1	<20	<20	<1	<1
1,1-Dichloroethene	<1	<1	<20	<20	<1	<1
Acetone	<27 J	<39 J	<430 J	<100	<10 J	<18 J
Carbon disulfide	<1	<1 J	<20	<20 J	<1	<1
Methylene chloride	<2.5	<2	<40	<40	<2.2	<1
trans-1,2-Dichloroethene	<1	<1	<20	<20	<1	<1
1,1-Dichloroethane	<1	<1	<20	<20	1.3	1.2
2-Butanone	R	R	R	R	R	R
cis-1,2-Dichloroethene	<1	<1	<20	<20	1.1	0.4 J
Chloroform	8.5	<4.0	<20	<25	<1	<1
1,1,1-Trichloroethane	<1	<1	<20	<20	0.8 J	<1
Carbon tetrachloride	<1	<1	<20	<20	<1	<1
Benzene	<1	<1	410	540	<1	<1
1,2-Dichloroethane	<1	<1	<20	<20	<1	<1
Trichloroethene	<1	<1	<20	<20	2.8	1.5
1,2-Dichloropropane	<1	<1	<20	<20	<1	<1
Bromodichloromethane	0.7 J	<1	<20	<20	<1	<1
2-Chloroethylvinylether	<1	<1	<20	<20	<1	<1
cis-1,3-Dichloropropene	<1	<1	<20	<20	<1	<1
4-Methyl-2-pentanone	<5	<5	<100	<100	<5	<5
Toluene	<1	<1	5.2 J	<20	<1	<1
trans-1,3-Dichloropropene	<1	<1	<20	<20	<1	<1
1,1,2-Trichloroethane	<1	<1	<20	<20	<1	<1
Tetrachloroethene	<1	<1	2.4 J	3 J	17	10
2-Hexanone	R	R	89 J	R	<5	R
Dibromochloromethane	<1	<1	<20	<20	<1	<1
Chlorobenzene	<1	<1	<20	<20	0.1 J	<1
Ethylbenzene	<1	<1	<20	<20	<1	<1
meta and/or para-Xylene	<1	<1	<20	<20	<1	<1
ortho-Xylene	<1	<1	5.1 J	4.9 J	<1	<1
Styrene	<1	<1	<20	<20	<1	<1
Bromoform	<1	<1	<20 J	<20	<1	<1
Trichlorofluoromethane	<1	<1	<20	<20	0.1 J	<1
1,1,2,2-Tetrachloroethane	<1	<1	<20	<20	<1	<1
Total VOCs:	**9.2**	**0**	**511.7**	**547.9**	**23.2**	**13.1**

ug/L Micrograms per liter.
VOCs Volatile organic compounds.
J Estimated value.
B Compound was also detected in the associated method blank.
R Unusable value.

Table 3-2. Concentrations of Volatile Organic Compounds Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	SY-9	SY-9	PK-10S	PK-10S	PK-10I	PK-10I (Rep-2)
Sample Date:	11/1/93	11/29/93	11/4/93	12/1/93	11/4/93	11/4/93
Parameter (concentrations in ug/L)						
Dichlorodifluoromethane	<1	<1 J	<1 J	0.2 J	<1 J	<1 J
Chloromethane	<1 J	<1	<1	<1	<1	<1
Vinyl chloride	<1	<1	<1	<1	0.7 J	0.8 J
Bromomethane	<1 J	<1	<1 J	<1	<1 J	<1 J
Chloroethane	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	0.8 J	0.9 J	0.5 J	<1
Acetone	<94 J	<85 J	<14 J	<18 J	<29 J	<26 J
Carbon disulfide	<1	<1 J	<1	<1	<1	<1
Methylene chloride	<2	<2	<2	<2	<2	<2
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1	0.1 J	5.4	6.7	6.6	6.3
2-Butanone	R	R	R	R	R	R
cis-1,2-Dichloroethene	<1	0.2 J	<1	<1	2.7	2.5
Chloroform	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1	<1	2.5	3.3	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1
Benzene	<1	0.1 J	<1	<1	0.5 J	0.5 J
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1
Trichloroethene	<1	<1	0.5 J	0.7 J	1.2	1.2
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1
2-Chloroethylvinylether	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone	<5	<5	<5	<5	<5	<5
Toluene	<1	<1	0.3 J	0.8 J	0.3 J	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1
Tetrachloroethene	<1	<1	1.3	1.3	3.3	3.3
2-Hexanone	R	R	<5	R	<5	<5
Dibromochloromethane	<1	<1	<1	<1	<1	<1
Chlorobenzene	1.5	1.3	<1	<1	20	17
Ethylbenzene	<1	<1	<1	<1	<1	<1
meta and/or para-Xylene	<1	<1	<1	<1	<1	<1
ortho-Xylene	<1	<1	<1	<1	<1	<1
Styrene	<1	<1	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1
Total VOCs:	**1.5**	**1.7**	**10.8**	**13.9**	**35.8**	**31.6**

ug/L Micrograms per liter.
VOCs Volatile organic compounds.
J Estimated value.
B Compound was also detected in the associated method blank.
R Unusable value.

Table 3-2. Concentrations of Volatile Organic Compounds Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	PK-10I	(Rep-2)	PK-10D	PK-10D	RB-11S	RB-11S
Sample Date:	12/1/93	12/1/93	11/4/93	12/1/93	11/3/93	11/30/93
Parameter (concentrations in ug/L)						
Dichlorodifluoromethane	<1	0.2 J	<1 J	<1	<1	<1 J
Chloromethane	<1	<1	<1	<1	<1	<1
Vinyl chloride	0.6 J	0.7 J	<1	<1	<1	<1
Bromomethane	<1	<1	<1 J	<1	<1	<1
Chloroethane	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1	0.2 J	<1	<1	<1	<1
Acetone	<23 J	<30 J	<16 J	<25 J	<35 J	<56 J
Carbon disulfide	<1	<1	<1	<1	<1	<1 J
Methylene chloride	<2	<2	<2	<2	<2	<2
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	5.4	5.6	0.4 J	0.5 J	<1	<1
2-Butanone	R	R	R	R	R	R
cis-1,2-Dichloroethene	1.3	1.4	0.4 J	0.3 J	<1	<1
Chloroform	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1
Benzene	<1	<1	0.4 J	<1	<1	<1
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1
Trichloroethene	0.9 J	0.9 J	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1
2-Chloroethylvinylether	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone	<5	<1	<5	<5	<5	<5
Toluene	0.8 J	1.0	0.7 J	5.7	<1	0.8 J
trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1
Tetrachloroethene	1.4	1.5	<1	<1	<1	<1
2-Hexanone	R	R	<5	R	<5	R
Dibromochloromethane	<1	<1	<1	<1	<1	<1
Chlorobenzene	5.2	5.3	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1	<1
meta and/or para-Xylene	<1	<1	<1	<1	<1	0.1 J
ortho-Xylene	<1	<1	<1	<1	<1	<1
Styrene	<1	<1	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1
Total VOCs:	**15.6**	**16.8**	**1.9**	**6.5**	**0**	**0.9**

ug/L Micrograms per liter.
VOCs Volatile organic compounds.
J Estimated value.
B Compound was also detected in the associated method blank.
R Unusable value.

Table 3-2. Concentrations of Volatile Organic Compounds Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	RB-11I	RB-11I (Rep-1)	RB-11I	RB-11I (Rep-1)	RB-11D	RB-11D
Sample Date:	11/3/93	11/3/93	11/30/93	11/30/93	11/3/93	11/30/93
Parameter (concentrations in ug/L)						
Dichlorodifluoromethane	1.6 J	1.6 J	2.6 J	2.7 J	<1	<1 J
Chloromethane	<1	<1	<1	<1	<1	<1
Vinyl chloride	<1	<1	<1	<1	<1	<1
Bromomethane	<1	<1	<1	<1	<1	<1
Chloroethane	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	1.2	1.3	1.6	1.5	<1	<1
Acetone	<19 J	<14 J	<64 J	<46 J	R	<38 J
Carbon disulfide	<1	<1	<1 J	<1 J	<1	<1 J
Methylene chloride	<2	<2	<2	<2	<2	<2
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	10	10	13	13	<1	<1
2-Butanone	R	R	R	R	R	R
cis-1,2-Dichloroethene	2.8	2.9	2.1	2.2	<1	<1
Chloroform	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	3.4	3.4	4.8	4.9	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1
Benzene	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1
Trichloroethene	3.0	3.0	3.9	4.0	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1
2-Chloroethylvinylether	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone	<5	<5	<5	<5	<5	<5
Toluene	0.6 J	0.6 J	0.3 J	0.3 J	1.2	0.4 J
trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1
Tetrachloroethene	19	19	23	23	<1	<1
2-Hexanone	<5	<5	R	R	<5	R
Dibromochloromethane	<1	<1	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1	<1
meta and/or para-Xylene	<1	<1	<1	<1	0.1 J	<1
ortho-Xylene	<1	<1	<1	<1	<1	<1
Styrene	<1	<1	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1	<1	0.9 J	0.9 J	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1
Total VOCs:	**41.6**	**41.8**	**52.2**	**52.5**	**1.3**	**0.4**

ug/L Micrograms per liter.
VOCs Volatile organic compounds.
J Estimated value.
B Compound was also detected in the associated method blank.
R Unusable value.

Table 3-2. Concentrations of Volatile Organic Compounds Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	RW-12I	RW-12I (Rep-3)	RW-12I	RW-12I (Rep-3)	RW-12D	RW-12D
Sample Date:	11/5/93	11/5/93	12/2/93	12/2/93	11/5/93	12/2/93
Parameter (concentrations in ug/L)						
Dichlorodifluoromethane	<2	<2	<5	<5	<1	<1
Chloromethane	<2	<2	<5	<5	<1	<1
Vinyl chloride	<2	<2	0.6 J	<5	9.2	17
Bromomethane	<2	<2	<5	<5	<1	<1 J
Chloroethane	<2	<2	<5	<5	<1	<1 J
1,1-Dichloroethene	13	15	26	27	<1	<1
Acetone	R	R	<130 J	<130 J	<29 J	<21 J
Carbon disulfide	<2 J	<2 J	<5 J	<5 J	<1 J	<1 J
Methylene chloride	<2	<4	<10	<12	<2	<2
trans-1,2-Dichloroethene	<2	<2	<5	<5	<1	<1
1,1-Dichloroethane	11	13	17	17	<1	0.3 J
2-Butanone	R	R	R	R	R	R
cis-1,2-Dichloroethene	5.2	5.7	5.7	5.9	2.6	2.3
Chloroform	<2	<2	<5	<5	<1.3	<1.4
1,1,1-Trichloroethane	40	40	75	75	<1	<1
Carbon tetrachloride	<2	<2	<5	<5	<1	<1
Benzene	<2	<2	0.5 J	0.5 J	0.4 J	0.9 J
1,2-Dichloroethane	<2	<2	<5	<5	<1	<1.8
Trichloroethene	6.2	6.3	9.8	9.9	0.9 J	1.1
1,2-Dichloropropane	<2	<2	<5	<5	<1	1.0
Bromodichloromethane	<2	<2	<5	<5	<1	<1
2-Chloroethylvinylether	<2 J	<2 J	<5	<5	<1 J	<1
cis-1,3-Dichloropropene	<2	<2	<5	<5	<1	<1
4-Methyl-2-pentanone	<10	<10	<25	<25	<5	<5
Toluene	<2	<2	13	12	0.7 J	6.6
trans-1,3-Dichloropropene	<2	<2	<5	<5	<1	<1
1,1,2-Trichloroethane	<2	<2	<5	<5	<1	<1
Tetrachloroethene	68	71	110	110	2.6	2.4
2-Hexanone	R	R	R	R	R	R
Dibromochloromethane	<2	<2	<5	<5	<1	<1
Chlorobenzene	1.1 J	1.3 J	0.9 J	0.9 J	<1	0.3 J
Ethylbenzene	<2	<2	<5	<5	<1	<1
meta and/or para-Xylene	<2	<2	<5	<5	<1	<1
ortho-Xylene	<2	<2	<5	<5	<1	<1
Styrene	<2	<2	<5	<5	<1	<1
Bromoform	<2	<2	<5	<5	<1	<1
Trichlorofluoromethane	<2	<2	1.2 J	1.2 J	<1	<1
1,1,2,2-Tetrachloroethane	<2	<2	<5	<5	<1	<1
Total VOCs:	**144.5**	**152.3**	**259.7**	**259.4**	**16.4**	**31.9**

ug/L Micrograms per liter.
VOCs Volatile organic compounds.
J Estimated value.
B Compound was also detected in the associated method blank.
R Unusable value.

Table 3-2. Concentrations of Volatile Organic Compounds Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank
Sample Date:	11/1/93	11/2/93	11/3/93	11/4/93	11/5/93	11/29/93
Parameter (concentrations in ug/L)						
Dichlorodifluoromethane	<1	<1	<1	<1 J	<1 J	0.4 J
Chloromethane	<1 J	<1 J	<1	<1	<1	<1
Vinyl chloride	<1	<1	<1	<1	<1	<1
Bromomethane	<1 J	<1 J	<1	<1 J	<1	<1
Chloroethane	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1
Acetone	28 JB	34 JB	14 JB	14 J	35 J	33 J
Carbon disulfide	<1	<1	<1	<1	<1	<1 J
Methylene chloride	2.8 JB	1 JB	0.4 JB	0.4 JB	0.5 JB	2.7 JB
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1	<1	<1
2-Butanone	R	R	R	R	R	R
cis-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1
Chloroform	0.9 J	1.1	0.8 J	1.0 B	0.8 JB	0.8 JB
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1
Benzene	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1
Trichloroethene	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1
2-Chloroethylvinylether	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone	<5	<5	<5	<5	<5	<5
Toluene	0.2 J	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1
Tetrachloroethene	<1	<1	<1	<1	<1	<1
2-Hexanone	R	R	<5	<5	<5	R
Dibromochloromethane	<1	<1	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1	<1
meta and/or para-Xylene	<1	<1	<1	<1	<1	<1
ortho-Xylene	<1	<1	<1	<1	<1	<1
Styrene	<1	<1	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1	<1 J	<1
Trichlorofluoromethane	<1	<1	<1	<1	<1	0.4 J
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1
Total VOCs:	**31.9**	**36.1**	**15.2**	**15.4**	**36.3**	**37.3**

ug/L Micrograms per liter.
VOCs Volatile organic compounds.
J Estimated value.
B Compound was also detected in the associated method blank.
R Unusable value.

Table 3-2. Concentrations of Volatile Organic Compounds Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	Trip Blank	Trip Blank	Trip Blank	Trip Blank
Sample Date:	11/30/93	12/1/93	12/2/93	12/3/93
Parameter (concentrations in ug/L)				
Dichlorodifluoromethane	0.4 J	<1	<1	<1
Chloromethane	<1	<1	<1	<1
Vinyl chloride	<1	<1	<1	<1
Bromomethane	<1	<1	<1 J	<1
Chloroethane	<1	<1	<1 J	<1
1,1-Dichloroethene	<1	<1	<1	<1
Acetone	30 J	14 JB	24 J	50 JB
Carbon disulfide	<1 J	<1	<1 J	<1
Methylene chloride	0.5 JB	0.8 JB	0.7 JB	0.7 JB
trans-1,2-Dichloroethene	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1
2-Butanone	R	R	R	R
cis-1,2-Dichloroethene	<1	<1	<1	<1
Chloroform	1.2 B	1.0 B	0.9 JB	0.9 JB
1,1,1-Trichloroethane	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1
Benzene	<1	<1	<1	<1
1,2-Dichloroethane	1.0	<1	0.8 J	1.5
Trichloroethene	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1
2-Chloroethylvinylether	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1
4-Methyl-2-pentanone	<5	<5	<5	<5
Toluene	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1
Tetrachloroethene	<1	<1	<1	<1
2-Hexanone	R	R	R	R
Dibromochloromethane	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1
meta and/or para-Xylene	<1	<1	<1	<1
ortho-Xylene	<1	<1	<1	<1
Styrene	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1
Total VOCs:	**33.1**	**15.8**	**26.4**	**53.1**

ug/L Micrograms per liter.
VOCs Volatile organic compounds.
J Estimated value.
B Compound was also detected in the associated method blank.
R Unusable value.

Table 3-2. Concentrations of Volatile Organic Compounds Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank
Sample Date:	11/1/93	11/2/93	11/3/93	11/4/93	11/5/93	11/29/93
Parameter (concentrations in ug/L)						
Dichlorodifluoromethane	<1	<1	<1	1.0 J	<1 J	0.4 J
Chloromethane	<1 J	<1 J	<1	0.4 J	<1	<1
Vinyl chloride	<1	<1	<1	<1	<1	<1
Bromomethane	<1 J	<1 J	<1	<1 J	<1	<1
Chloroethane	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1
Acetone	19 JB	21 JB	12 JB	55 J	29 J	32 J
Carbon disulfide	<1	<1	<1	<1	<1	<1 J
Methylene chloride	4.3 JB	0.8 JB	0.5 JB	0.3 JB	0.5 JB	2.7 BJ
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1	<1	<1
2-Butanone	R	R	R	R	R	R
cis-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1
Chloroform	1.1	1.1	0.9 J	1.2 B	1.0 B	0.7 JB
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1
Benzene	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	<1	0.4 J	<1	0.4 J	<1	0.8 J
Trichloroethene	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1
2-Chloroethylvinylether	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone	<5	<5	<5	5.3	<5	<5
Toluene	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1
Tetrachloroethene	<1	<1	<1	<1	<1	<1
2-Hexanone	R	R	<5	<5	<5	R
Dibromochloromethane	<1	<1	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1	<1
meta and/or para-Xylene	<1	<1	<1	<1	<1	<1
ortho-Xylene	<1	<1	<1	<1	<1	<1
Styrene	<1	<1	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1	<1 J	<1
Trichlorofluoromethane	<1	<1	<1	<1	<1	0.2 J
1,1,2,2-Tetrachloroethane	<1	<1	<1	0.6 J	<1	<1
Total VOCs:	**24.4**	**23.3**	**13.4**	**64.2**	**30.5**	**36.8**

ug/L Micrograms per liter.
VOCs Volatile organic compounds.
J Estimated value.
B Compound was also detected in the associated method blank.
R Unusable value.

Table 3-2. Concentrations of Volatile Organic Compounds Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	Field Blank	Field Blank	Field Blank	Field Blank
Sample Date:	11/30/93	12/1/93	12/2/93	12/3/93
Parameter (concentrations in ug/L)				
Dichlorodifluoromethane	0.4 J	<1	<1	<1
Chloromethane	<1	<1	<1	<1
Vinyl chloride	<1	<1	<1	<1
Bromomethane	<1	<1	<1	<1
Chloroethane	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1
Acetone	44 J	31 JB	34 JB	34 JB
Carbon disulfide	<1 J	<1	<1	<1
Methylene chloride	2.8 JB	2.1 JB	2.4 JB	2.1 B
trans-1,2-Dichloroethene	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1
2-Butanone	R	R	R	R
cis-1,2-Dichloroethene	<1	<1	<1	<1
Chloroform	0.7 JB	0.8 JB	0.9 JB	0.8 JB
1,1,1-Trichloroethane	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1
Benzene	<1	<1	<1	<1
1,2-Dichloroethane	1.2	0.8 J	0.5 J	<1
Trichloroethene	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1
2-Chloroethylvinylether	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1
4-Methyl-2-pentanone	<5	<5	<5	<5
Toluene	<1	<1	0.2 J	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1
Tetrachloroethene	<1	<1	<1	<1
2-Hexanone	R	R	R	R
Dibromochloromethane	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1
meta and/or para-Xylene	<1	<1	<1	<1
ortho-Xylene	<1	<1	<1	<1
Styrene	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1
Total VOCs:	**49.1**	**34.7**	**38**	**36.9**

ug/L Micrograms per liter.
VOCs Volatile organic compounds.
J Estimated value.
B Compound was also detected in the associated method blank.
R Unusable value.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		SY-1	SY-1	SY-1	SY-1	SY-1D	SY-1D	SY-1D	SY-1D
Sample Date:		11/3/93	11/3/93	11/30/93	11/30/93	11/4/93	11/4/93	12/1/93	12/1/93
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Parameter (concentrations in ug/L)	MCL (a)								
Antimony	6	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0
Arsenic	50	17.4 BJ	18.5	23.9 J	22.6	<1.0 J	<1.0	<1.0 J	<1.0
Barium	1,000	78.6 B	86.6 B	88.4 BJ	102 B	57.0 B	56.6 B	62.2 BJ	69.2 B
Beryllium	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	50	18.6 J	<3.0 J	18.7	<3.0	<3.0	<3.0 J	<3.0	<3.0
Copper	1,000	29.0	8.9 B	9.6 B	<7.0	<7.0	<7.0	<7.0	<7.0
Iron	300	80,000	20,400	79,900	23,000	152	<87.0	<87.0	<87.0
Lead	50	13.1	<2.0 J	9.5 J	<2.0	<2.0	<2.0	<2.0	<2.0
Mercury	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	100	26.8 B	<11.0	11.2 B	17.4 B	<11.0	<11.0	<11.0	12.1 B
Potassium	NS	5,090	4,490 B	4,540 BJ	4,750 B	10,600	10,600	10,700	11,000
Selenium	10	<2.0 J	<2.0	<2.0 J	<2.0	<2.0 J	<2.0 J	<2.0 J	<2.0
Silver	50	2.8 B	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	NS	20,100	20,800	23,000	23,600	180,000	179,000	192,000 J	190,000
Thallium	2	<1.0 J	<1.0	<1.0 J	<1.0	<1.0	<1.0 J	<1.0 J	<1.0 J
Zinc	5,000	39.3	21.2	R	23.5	11.9 B	11.6 B	14.8 B	29.2

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		SY-2R	SY-2R	SY-2R	SY-2R	SY-2D	SY-2D	SY-2D	SY-2D
Sample Date:		11/2/93	11/2/93	12/3/93	12/3/93	11/2/93	11/2/93	12/3/93	12/3/93
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Parameter (concentrations in ug/L)	MCL (a)								
Antimony	6	36.4 B	<21.0	24.3 B	<21.0	<21.0	<21.0	<21.0	<21.0
Arsenic	50	<1.0 J	<1.0	<1.0	<1.0	<1.0 J	<1.0	<1.0	<1.0
Barium	1,000	64.2 B	88.4 B	50.3 B	49.2 B	57.0 B	57.8 B	48.7 B	37.6 B
Beryllium	4	7.8	2.5 B	1.4 B	1.2 B	<1.0	<1.0	<1.0	<1.0
Cadmium	5	<2.0	<2.0	<2.0	2.0 B	2.8 BJ	<2.0	<2.0	2.4 B
Chromium	50	16.2	<3.0 J	3.7 BJ	<3.0 J	<3.0	<3.0 J	6.4 BJ	<3.0 J
Copper	1,000	24.5 B	<7.0	<7.0	<7.0	12.6 B	<7.0	<7.0	<7.0
Iron	300	20,600	1,770	2,060	383	264	<87.0	R	<87.0
Lead	50	128	<2.0	11.1 J	1.7 B	<2.0	<2.0	1.8 BJ	<1.0
Mercury	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	100	91.1	21.8 B	16.3 B	<11.0	<11.0	<11.0	<11.0	<11.0
Potassium	NS	18,700	18,200	19,800	18,200	13,200	12,600	12,600	12,600
Selenium	10	<2.0 J	<2.0 J	<2.0	<2.0	<2.0 J	<2.0	<2.0	<2.0
Silver	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	NS	239,000	232,000	227,000	204,000	70,500	66,600	65,000	62,500
Thallium	2	<1.0 J	<1.0	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J
Zinc	5,000	115	48.6	29.9 J	29.7	11.5 B	10.3 B	29.1 J	24.7

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		SY-3	SY-3	SY-3	SY-3	SY-3D	SY-3D	SY-3D	SY-3D
Sample Date:		11/2/93	11/2/93	12/3/93	12/3/93	11/2/93	11/2/93	12/3/93	12/3/93
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Parameter (concentrations in ug/L)	MCL (a)								
Antimony	6	**91.8**	<21.0	**35.7 B**	**36.7 B**	<21.0	<21.0	<21.0	<21.0
Arsenic	50	**41.4 J**	**15.0**	**75.1**	**47.4**	**94.7 J**	**8.9 B**	**102**	**2.6 B**
Barium	1,000	**237**	**110 B**	**213**	**186 B**	**162 B**	**101 B**	**153 B**	**112 B**
Beryllium	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**2.4 B**
Chromium	50	**31.3**	<3.0 J	**5.5 BJ**	<3.0 J	**7.3 BJ**	<3.0 J	<3.0 J	<3.0 J
Copper	1,000	**80.1**	<7.0	**15.4 B**	<7.0	**104**	**40.8**	**44.9**	**8.3 B**
Iron	300	**295,000**	**2,550**	**70,100**	**7,900**	**34,700**	**1,810**	**23,300**	**728**
Lead	50	**62.8**	<2.0 J	**33.0 J**	<1.0	**10.7**	<2.0	**8.8 J**	<1.0
Mercury	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	100	**24.2 B**	<11.0	<11.0	<11.0	<11.0	**17.8 B**	**14.9 B**	<11.0
Potassium	NS	**70,500**	**68,000**	**73,600**	**66,600**	**131,000**	**132,000**	**142,000**	**132,000**
Selenium	10	<2.0 J	<2.0	<2.0	<2.0	<2.0 J	<2.0 J	<2.0	<2.0
Silver	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	NS	**99,100**	**98,400**	**124,000**	**116,000**	**194,000**	**198,000**	**211,000**	**196,000**
Thallium	2	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J
Zinc	5,000	**181**	**16.5 B**	**92.4 J**	**33.0**	**76.5**	**23.3**	**66.0 J**	**37.2**

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		SY-3DD	SY-3DD	SY-3DD	SY-3DD	SY-4	SY-4	SY-4	SY-4
Sample Date:		11/1/93	11/1/93	11/29/93	11/29/93	11/2/93	11/2/93	12/3/93	12/3/93
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Parameter (concentrations in ug/L)	MCL (a)								
Antimony	6	**25.0 B**	<21.0	<21.0	<21.0	**23.1 B**	**38.3 B**	**21.0 B**	<21.0
Arsenic	50	<1.0 J	<1.0	<1.0 J	<1.0	**9.4 BJ**	**5.2 B**	**10.3**	**5.9 B**
Barium	1,000	<2.0	<2.0	**2.5 B**	**11.3 B**	**129 B**	**116 B**	**128 B**	**127 B**
Beryllium	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	50	<3.0	<3.0 J	**9.4 B**	<3.0	**7.8 B**	<3.0 J	**5.3 BJ**	<3.0 J
Copper	1,000	R	R	**20.1 B**	<7.0	**63.7**	<7.0	**61.9**	<7.0
Iron	300	**1,030**	<87.0	**564**	<87.0	**41,200**	**9,810**	**45,900**	**8,910**
Lead	50	**7.5**	<2.0 J	**2.7 B**	<2.0	**24.3**	<2.0 J	**65.4 J**	<1.0
Mercury	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	100	**14.6 B**	<11.0	**34.2 B**	**16.4 B**	<11.0	<11.0	**16.0 B**	<11.0
Potassium	NS	**869 B**	<473	**823 B**	**1,030 B**	**27,800**	**26,500**	**27,600**	**27,700**
Selenium	10	<2.0 J	<2.0	<2.0 J	<2.0	<2.0 J	<2.0 J	<2.0	<2.0
Silver	50	**2.3 B**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	NS	**7,530**	**5,780**	**4,760 B**	**4,730 B**	**117,000**	**118,000**	**115,000**	**112,000**
Thallium	2	<1.0 J	<1.0	<1.0 J	<1.0	<1.0 J	<1.0 J	<1.0 J	<1.0 J
Zinc	5,000	**160**	**72.9**	R	**52.4**	**99.9**	**13.1 B**	**147 J**	**37.5**

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		SY-6	SY-6	SY-6	SY-6	SY-6D	SY-6D	SY-6D	SY-6D
Sample Date:		11/5/93	11/5/93	12/2/93	12/2/93	11/1/93	11/1/93	11/29/93	11/29/93
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Parameter (concentrations in ug/L)	MCL (a)								
Antimony	6	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0
Arsenic	50	<1.0	<1.0	<1.0	<1.0	1.2 BJ	<1.0	<1.0 J	<1.0
Barium	1,000	59.6 B	76.0 B	91.6 B	91.6 B	41.8 B	52.4 B	37.7 BJ	44.6 B
Beryllium	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium	5	<2.0	2.3 B	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	50	<3.0	<3.0	<3.0 J	<3.0 J	23.9 J	<3.0 J	<3.0	<3.0
Copper	1,000	16.8 B	<7.0	38.5	<7.0	R	R	7.6 B	<7.0
Iron	300	R	399	22,200	173	3,280	961	986	939
Lead	50	14.0 J	<2.0 J	21.5 J	<1.0	7.5	<2.0	<2.0 J	<2.0
Mercury	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	100	<11.0	<11.0	<11.0	<11.0	12.6 B	<11.0	14.3 B	<11.0
Potassium	NS	1,330 B	1,640 B	1,800 B	1,660 B	2,080 B	676 B	2,030 B	2,210 B
Selenium	10	<2.0 J	<2.0	<2.0	<2.0	<2.0 J	<2.0 J	<2.0 J	<2.0
Silver	50	<2.0	<2.0	<2.0	<2.0	3.9 B	<2.0	<2.0	<2.0
Sodium	NS	38,900 J	49,100 J	38,200	38,200	50,100	50,400	50,900	51,200
Thallium	2	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0
Zinc	5,000	347 J	235 J	611 J	183	52.4	55.3	R	20.8

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		SY-7	SY-7	SY-7	SY-7	SY-8	SY-8	SY-8	SY-8
Sample Date:		11/4/93	11/4/93	12/2/93	12/2/93	11/4/93	11/4/93	12/1/93	12/1/93
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Parameter (concentrations in ug/L)	MCL (a)								
Antimony	6	27.8 B	46.8 B	34.4 B	25.2 B	<21.0	<21.0	25.5 B	<21.0
Arsenic	50	3.4 B	1.2 B	7.0 B	1.7 B	<1.0	<1.0	<1.0 J	<1.0
Barium	1,000	171 B	146 B	179 B	179 B	68.6 B	74.4 B	65.9 BJ	82.9 B
Beryllium	4	<1.0	<1.0	<1.0	1.5 B	<1.0	<1.0	<1.0	<1.0
Cadmium	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	50	28.2	<3.0	49.9 J	<3.0 J	<3.0	<3.0	<3.0	4.4 B
Copper	1,000	86.1	9.5 B	134	<7.0	<7.0	<7.0	<7.0	<7.0
Iron	300	R	77,800	181,000	71,200	R	2,540	2,450	2,480
Lead	50	37.9 J	<2.0 J	21.9 J	<1.0	6.0 J	<2.0 J	<2.0	<2.0
Mercury	2	0.77	<0.20	0.31	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	100	22.1 B	<11.0	69.6	14.1 B	<11.0	<11.0	16.8 B	<11.0
Potassium	NS	1,650 B	1,560 B	2,280 B	1,940 B	4,740 B	5,110	5,420	5,790
Selenium	10	<2.0 J	<2.0	<2.0	<2.0	<2.0 J	<2.0 J	<2.0 J	<2.0
Silver	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	NS	110,000	118,000	173,000	175,000	26,800	29,000	29,300 J	29,100
Thallium	2	<1.0 J	<1.0 J	<1.0 J	1.8 BJ	<1.0 J	<1.0 J	<1.0 J	<1.0 J
Zinc	5,000	529 J	174 J	389 J	139	1,840 J	1,970 J	1,900	1,940

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		SY-9	SY-9	SY-9	SY-9	PK-10S	PK-10S	PK-10S	PK-10S
Sample Date:		11/1/93	11/1/93	11/29/93	11/29/93	11/4/93	11/4/93	12/1/93	12/1/93
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Parameter (concentrations in ug/L)	MCL (a)								
Antimony	6	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0
Arsenic	50	39.3 J	19.4	26.7 J	19.1	1.9 B	1.1 B	3.5 BJ	<1.0
Barium	1,000	144 B	159 B	155 BJ	82.8 B	38.5 B	32.0 B	36.3 BJ	52.8 B
Beryllium	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	50	23.3 J	<3.0 J	24.7	<3.0	<3.0	<3.0	<3.0	<3.0
Copper	1,000	R	R	160	<7.0	38.8	<7.0	8.1 B	<7.0
Iron	300	27,300	6,480	24,400	5,340	R	682	5,380	694
Lead	50	58.8	<2.0	41.8	<2.0	10.1 J	<2.0 J	6.2	<2.0 J
Mercury	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	100	22.2 B	<11.0	23.1 B	<11.0	25.0 B	17.6 B	17.5 B	11.1 B
Potassium	NS	3,120 B	2,000 B	3,550 B	2,130 B	1,010 B	986 B	1,900 B	1,500 B
Selenium	10	<2.0 J	<2.0	<2.0 J	<2.0	<2.0 J	<2.0 J	<2.0 J	<2.0
Silver	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	NS	25,900 J	30,400 J	27,600 J	32,500 J	19,400	20,900	20,500	20,900
Thallium	2	<1.0 J	<1.0 J	<1.0 J	<1.0	<1.0 J	<1.0 J	<1.0 J	<1.0 J
Zinc	5,000	227	81.6	219	67.9	178 J	155 J	43.3 J	53.8 J

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		PK-10I	PK-10I (Rep-2)	PK-10I	PK-10I (Rep-2)	PK-10I	PK-10I (Rep-2)	PK-10I	PK-10I (Rep-2)
Sample Date:		11/4/93	11/4/93	11/4/93	11/4/93	12/1/93	12/1/93	12/1/93	12/1/93
		Total	Total	Dissolved	Dissolved	Total	Total	Dissolved	Dissolved
Parameter (concentrations in ug/L)	MCL (a)								
Antimony	6	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0
Arsenic	50	<1.0	<1.0	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0	<1.0
Barium	1,000	54.8 B	60.8 B	52.2 B	54.8 B	65.4 BJ	65.4 BJ	64.8 B	67.9 B
Beryllium	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	50	<3.0	<3.0	<3.0	<3.0	3.7 B	4.6 B	<3.0	<3.0
Copper	1,000	9.9 B	13.0 B	13.7 B	16.8 B	<7.0	<7.0	<7.0	<7.0
Iron	300	R	R	<87.0	<87.0	474	473	<87.0	143
Lead	50	3.8 J	3.8 J	2.6 BJ	2.8 BJ	3.2	3.3	<2.0	<2.0
Mercury	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	100	<11.0	<11.0	<11.0	12.7 B	16.4 B	16.8 B	15.0 B	<11.0
Potassium	NS	46,100	50,600	47,300	50,800	53,400	53,500	50,400	52,400
Selenium	10	<2.0 J	<2.0 J	<2.0 J	<2.0 J	<2.0 J	<2.0 J	<2.0	<2.0
Silver	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	NS	176,000	193,000	179,000	189,000	235,000 J	237,000 J	220,000	229,000
Thallium	2	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J
Zinc	5,000	58.7 J	75.8 J	63.0 J	65.7 J	42.6	40.8	22.8	25.0

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		PK-10D	PK-10D	PK-10D	PK-10D	RB-11S	RB-11S	RB-11S	RB-11S
Sample Date:		11/4/93	11/4/93	12/1/93	12/1/93	11/3/93	11/3/93	11/30/93	11/30/93
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Parameter (concentrations in ug/L)	MCL (a)								
Antimony	6	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0
Arsenic	50	9.7 B	9.8 B	6.3 B	7.0 B	<1.0 J	<1.0	<1.0 J	<1.0
Barium	1,000	3.0 B	2.0 B	4.2 B	10.6 B	8.6 B	9.0 B	8.1 B	22.6 B
Beryllium	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium	5	<2.0	<2.0	2.0 B	<2.0	2.8 BJ	<2.0	<2.0	<2.0
Chromium	50	9.4 B	3.9 B	3.5 BJ	3.5 BJ	<3.0	<3.0 J	8.6 B	<3.0
Copper	1,000	<7.0	<7.0	<7.0	<7.0	13.9 B	<7.0	<7.0	<7.0
Iron	300	R	112	179	<87.0	1130	175	1,270	114
Lead	50	3.4 J	<2.0 J	1.7 BJ	<1.0	2.6 B	<2.0	3.7	<2.0
Mercury	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	100	<11.0	<11.0	<11.0	<11.0	<11.0	<11.0	18.2 B	<11.0
Potassium	NS	<473	586 B	853 B	974 B	1,140 B	790 B	1,510 B	1,510 B
Selenium	10	<2.0 J	<2.0	<2.0	2.2 B	<2.0 J	<2.0	<2.0 J	<2.0
Silver	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	NS	22,900	24,600	15,900	16,600	7,590	8,020	7,920	8,040
Thallium	2	<1.0 J	<1.0 J	<1.0 J	<1.0	<1.0	<1.0 J	<1.0 J	<1.0
Zinc	5,000	64.8 J	51.3 J	53.6 J	42.1	30.4	28.2	53.1	33.1

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		RB-11I	RB-11I	RB-11I (Rep-1)	RB-11I (Rep-1)	RB-11I	RB-11I	RB-11I (Rep-1)	RB-11I (Rep-1)
Sample Date:		11/3/93	11/3/93	11/3/93	11/3/93	11/30/93	11/30/93	11/30/93	11/30/93
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Parameter (concentrations in ug/L)	MCL (a)								
Antimony	6	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0
Arsenic	50	<1.0 J	<1.0	<1.0 J	<1.0	<1.0 J	<1.0	<1.0 J	<1.0
Barium	1,000	56.2 B	39.7 B	58.4 B	34.9 B	67.2 BJ	71.7 B	66.6 BJ	69.8 B
Beryllium	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium	5	2.0 BJ	<2.0	3.7 BJ	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	50	15.5	<3.0 J	14.0	<3.0 J	<3.0	<3.0	<3.0	<3.0
Copper	1,000	15.1 B	<7.0	12.6 B	<7.0	<7.0	<7.0	<7.0	<7.0
Iron	300	959	104	792	112	881	<87.0	759	<87.0
Lead	50	4.9	3.2	4.4	3.3	4.2	<2.0	4.2	<2.0 J
Mercury	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	100	<11.0	<11.0	14.6 B	<11.0	21.8 B	12.1 B	14.6 B	13.9 B
Potassium	NS	1,320 B	1,080 B	1,260 B	1,480 B	1,620 B	1,710 B	1,560 B	1,980 B
Selenium	10	<2.0 J	<2.0 J	<2.0 J	<2.0	<2.0 J	<2.0	<2.0 J	<2.0
Silver	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	NS	17,400	18,600	18,200	17,600	18,500	18,800	18,700	18,300
Thallium	2	<1.0	<1.0	<1.0	<1.0	<1.0 J	<1.0	<1.0 J	<1.0
Zinc	5,000	66.9	62.8	66.1	68.3	48.6	44.3	41.2 J	45.6 J

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		RB-11D	RB-11D	RB-11D	RB-11D	RW-12I	RW-12I (Rep-3)	RW-12I	RW-12I (Rep-3)
Sample Date:		11/3/93	11/3/93	11/30/93	11/30/93	11/5/93	11/5/93	11/5/93	11/5/93
		Total	Dissolved	Total	Dissolved	Total	Total	Dissolved	Dissolved
Parameter (concentrations in ug/L)	MCL (a)								
Antimony	6	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	29.2 B	<21.0
Arsenic	50	<1.0 J	<1.0	<1.0 J	<1.0	<1.0	<1.0	1.4 B	<1.0
Barium	1,000	9.4 B	7.2 B	6.9 B	24.5 B	46.9 B	46.9 B	39.8 B	40.5 B
Beryllium	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	50	<3.0	<3.0 J	9.8 B	<3.0	6.8 B	5.5 B	<3.0	7.0 B
Copper	1,000	13.9 B	<7.0	<7.0	<7.0	<7.0	<7.0	<7.0	<7.0
Iron	300	975	<87.0	958	<87.0	R	R	<87.0	<87.0
Lead	50	4.6	<2.0	3.0	<2.0	4.5 J	2.3 BJ	<2.0 J	<2.0 J
Mercury	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	100	<11.0	<11.0	17.8 B	12.8 B	<11.0	<11.0	<11.0	<11.0
Potassium	NS	<473	<473	787 B	1,210 B	8,100 J	8,110 J	9,690 J	10,100 J
Selenium	10	<2.0 J	<2.0	<2.0 J	<2.0	<2.0 J	<2.0 J	<2.0	<2.0
Silver	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	NS	4,260 B	4,520 B	4,220 B	4,810 B	53,500 J	52,100 J	59,500 J	60,900 J
Thallium	2	<1.0	<1.0	<1.0 J	<1.0	<1.0 J	<1.0 J	<1.0 J	<1.0 J
Zinc	5,000	41.2	37.2	R	R	57.7 J	57.1 J	83.2 J	76.2 J

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		RW-12I	RW-12I (Rep-3)	RW-12I	RW-12I (Rep-3)	RW-12D	RW-12D	RW-12D	RW-12D
Sample Date:		12/2/93	12/2/93	12/2/93	12/2/93	11/5/93	11/5/93	12/2/93	12/2/93
		Total	Total	Dissolved	Dissolved	Total	Dissolved	Total	Dissolved
Parameter (concentrations in ug/L)	MCL (a)								
Antimony	6	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0
Arsenic	50	**1.6 B**	**1.4 B**	**1.8 B**	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	1,000	**54.0 B**	**55.1 B**	**47.7 B**	**48.2 B**	**46.9 B**	**18.3 B**	**76.2 B**	**49.8 B**
Beryllium	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium	5	<2.0	**3.3 B**	**2.4 B**	<2.0	<2.0	<2.0	**2.4 B**	<2.0
Chromium	50	<3.0 J	<3.0 J	**3.7 BJ**	<3.0 J	**11.9**	**3.1 B**	<3.0 J	**3.0 BJ**
Copper	1,000	<7.0	<7.0	<7.0	<7.0	<7.0	<7.0	**7.0 B**	<7.0
Iron	300	**320**	**342**	<87.0	<87.0	R	<87.0	**552**	<87.0
Lead	50	**2.8 BJ**	**3.3 J**	<1.0	<1.0	**7.1 J**	**2.7 BJ**	**7.1 J**	<1.0
Mercury	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	100	<11.0	<11.0	<11.0	<11.0	<11.0	<11.0	<11.0	<11.0
Potassium	NS	**10,300**	**10,300**	**9,670**	**10,300**	**1,880 B**	**2,040 B**	**1,850 B**	**1,850 B**
Selenium	10	<2.0	<2.0	<2.0	<2.0	**8.4 BJ**	**5.4**	**5.4**	**5.7**
Silver	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	NS	**60,800**	**62,000**	**57,800**	**60,300**	**55,700**	**55,000**	**66,500**	**65,000**
Thallium	2	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J	<1.0 J
Zinc	5,000	**48.9 J**	**58.9 J**	**43.7**	**55.4**	**77.4 J**	**95.6 J**	**85.6 J**	**78.4**

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank
Sample Date:		11/1/93	11/1/93	11/2/93	11/2/93	11/3/93	11/3/93	11/4/93	11/4/93
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Parameter (concentrations in ug/L)	MCL (a)								
Antimony	6	**21.1 B**	<21.0	**26.6 B**	<21.0	<21.0	**23.3 B**	<21.0	<21.0
Arsenic	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	1,000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Beryllium	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium	5	<2.0	<2.0	**2.7 BJ**	<2.0	**2.8 BJ**	<2.0	<2.0	<2.0
Chromium	50	<3.0	<3.0 J	<3.0	<3.0 J	**4.2 B**	<3.0 J	<3.0	<3.0
Copper	1,000	**28.6**	**25.0**	**16.3 B**	**8.6 B**	<7.0	<7.0	**8.6 B**	<7.0
Iron	300	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0
Lead	50	<2.0	<2.0 J	<2.0	<2.0 J	<2.0	<2.0	<2.0	<2.0 J
Mercury	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	100	<11.0	<11.0	<11.0	<11.0	<11.0	<11.0	<11.0	<11.0
Potassium	NS	<473	<473	<473	<473	<473	<473	<473	<473
Selenium	10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 J	<2.0
Silver	50	**2.1 B**	**2.2 B**	**3.1 B**	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	NS	<121	<121	<121	<121	<121	<121	<121	<121
Thallium	2	<1.0 J	<1.0	<1.0 J	<1.0	<1.0	<1.0 J	<1.0 J	<1.0 J
Zinc	5,000	R	R	**14.6 B**	**12.6 B**	<4.0	**11.3 B**	**5.7 B**	**13.4 B**

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank
Sample Date:		11/5/93	11/5/93	11/29/93	11/29/93	11/30/93	11/30/93	12/1/93	12/1/93
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Parameter (concentrations in ug/L)	MCL (a)								
Antimony	6	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0	<21.0
Arsenic	50	<1.0	<1.0	<1.0 J	<1.0	<1.0 J	<1.0	<1.0 J	<1.0
Barium	1,000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Beryllium	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	50	<3.0	**3.2 B**	**3.7 B**	<3.0	<3.0	<3.0	**6.1 B**	<3.0
Copper	1,000	<7.0	<7.0	**19.8 B**	<7.0	<7.0	<7.0	<7.0	<7.0
Iron	300	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0
Lead	50	<2.0	<2.0 J	<2.0 J	<2.0	<2.0	<2.0	<2.0	<2.0
Mercury	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	100	<11.0	<11.0	**13.5 B**	<11.0	**13.2 B**	<11.0	<11.0	<11.0
Potassium	NS	<473	<473	**671 B**	**677 B**	<473	<473	<473	<473
Selenium	10	<2.0 J	<2.0	<2.0 J	<2.0	<2.0 J	<2.0	<2.0 J	<2.0
Silver	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	NS	<121	<121	<121	<121	<121	**215 B**	**126 B**	**188 B**
Thallium	2	<1.0 J	<1.0 J	<1.0 J	<1.0	<1.0 J	<1.0	<1.0	<1.0
Zinc	5,000	**15.4 B**	**14.9 B**	**32.7**	**11.8 B**	**10.0 B**	**11.8 B**	**10.1 B**	**12.3 B**

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-3. Concentrations of Total and Dissolved Metals Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:		Field Blank	Field Blank	Field Blank	Field Blank
Sample Date:		12/2/93	12/2/93	12/3/93	12/3/93
		Total	Dissolved	Total	Dissolved
Parameter (concentrations in ug/L)	MCL (a)				
Antimony	6	<21.0	<21.0	<21.0	<21.0
Arsenic	50	<1.0 J	<1.0	<1.0	<1.0
Barium	1,000	<2.0	<2.0	<2.0	**4.8 B**
Beryllium	4	<1.0	<1.0	<1.0	<1.0
Cadmium	5	<2.0	<2.0	**2.2 B**	**2.6 B**
Chromium	50	<3.0	<3.0	<3.0 J	<3.0 J
Copper	1,000	<7.0	<7.0	<7.0	<7.0
Iron	300	<87.0	<87.0	**489**	<87.0
Lead	50	<2.0 J	<2.0	<1.0 J	<1.0
Mercury	2	<0.20	<0.20	<0.20	<0.20
Nickel	100	<11.0	<11.0	<11.0	<11.0
Potassium	NS	<473	**605 B**	<473	<473
Selenium	10	<2.0	<2.0	<2.0	<2.0
Silver	50	<2.0	<2.0	<2.0	<2.0
Sodium	NS	**191 B**	**125 B**	**272 B**	**460 B**
Thallium	2	<1.0 J	<1.0 J	<1.0 J	<1.0 J
Zinc	5,000	**11.8 B**	**7.0 B**	**16.9 BJ**	**16.2 B**

ug/L Micrograms per liter.
B Analyte concentration is between the instrument detection limit and the contract required quantitation limit.
J Estimated value.
R Unusable value.
NS No standard.
(a) Federal or State Drinking Water Standard (lowest value used), in micrograms per liter.
MCL Maximum Contaminant Level.

Table 3-4. Concentrations of Leachate Indicator Parameters Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	SY-1	SY-1	SY-1D	SY-1D	SY-2R	SY-2R	SY-2D
Sample Date:	11/3/93	11/30/93	11/4/93	12/1/93	11/2/93	12/3/93	11/2/93
Parameter (concentrations in mg/L)							
Ammonia-nitrogen	**0.43**	**0.45**	**11.8**	**9.90**	<0.04	**0.26**	**4.94**
Bicarbonate alkalinity, as CaCO3	**45.2**	**44.6**	**123**	**120**	**38.8**	**35.0**	**100**
Carbonate	<1.0	<1.00	<1.0	<1.00	<1.0	<1.00	<1.0
Chloride	**54.4**	**52.4**	**285**	**287**	**449**	**613**	**108**
Hardness, as CaCO3	**67.2**	**59.6**	**222**	**224**	**135**	**121**	**68.4**
Nitrate-nitrogen	<0.10	**0.29**	**6.21**	**6.19**	**2.42**	**2.41**	**1.20**
Sulfate	**20.2**	**16.0**	**146**	**150**	**56.0**	**58.4**	**22.6**
Total dissolved solids	**189**	**269**	**798**	**803**	**861**	**850**	**282**

mg/L Milligrams per liter.
NR Not requested.
CaCO3 Calcium carbonate.
J Estimated value.

Table 3-4. Concentrations of Leachate Indicator Parameters Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	SY-1	SY-1	SY-1D	SY-1D	SY-2R	SY-2R	SY-2D
Sample Date:	11/3/93	11/30/93	11/4/93	12/1/93	11/2/93	12/3/93	11/2/93
Parameter (concentrations in mg/L)							
Ammonia-nitrogen	0.43	0.45	11.8	9.90	<0.04	0.26	4.84
Bicarbonate alkalinity, as CaCO3	45.2	44.6	123	120	38.8	35.0	100
Carbonate	<1.0	<1.00	<1.0	<1.00	<1.0	<1.00	<1.0
Chloride	54.4	52.4	285	287	449	613	108
Hardness, as CaCO3	67.2	59.6	222	224	135	121	68.4
Nitrate-nitrogen	<0.10	0.29	6.21	6.19	2.42	2.41	1.20
Sulfate	20.2	16.0	146	150	56.0	58.4	22.6
Total dissolved solids	189	269	798	803	861	850	282

mg/L Milligrams per liter.
NR Not requested.
CaCO3 Calcium carbonate.
J Estimated value.

Table 3-4. Concentrations of Leachate Indicator Parameters Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	SY-2D	SY-3	SY-3	SY-3D	SY-3D	SY-3DD	SY-3DD
Sample Date:	12/3/93	11/2/93	12/3/93	11/2/93	12/3/93	11/1/93	11/29/93
Parameter (concentrations in mg/L)							
Ammonia-nitrogen	6.98	67.8	123	146	83.6	<0.04	<0.04
Bicarbonate alkalinity, as CaCO3	81.6	716	727	1,180	1,020	14.4	9.60
Carbonate	<1.00	1.28	<1.00	2.72	1.20	<1.0	<1.00
Chloride	97.0	136	176	269	265	4.20	4.5
Hardness, as CaCO3	58.4	362	348	470	468	7.6	6.6
Nitrate-nitrogen	1.39	<0.10	<0.10	0.22	0.46	<0.10	0.32
Sulfate	16.5	32.9	25.9	27.2	22.6	1.8	11.9
Total dissolved solids	299	726	757	1,240	1,400	44.0	54.0

mg/L Milligrams per liter.
NR Not requested.
CaCO3 Calcium carbonate.
J Estimated value.

Table 3-4. Concentrations of Leachate Indicator Parameters Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	SY-4	SY-4	SY-6	SY-6	SY-6D	SY-6D	SY-7
Sample Date:	11/2/93	12/3/93	11/5/93	12/2/93	11/1/93	11/29/93	11/4/93
Parameter (concentrations in mg/L)							
Ammonia-nitrogen	33.8	30.5	0.06	0.09	0.29	0.27	0.97
Bicarbonate alkalinity, as CaCO3	446	449	195	202	19.8	9.80	32.2 J
Carbonate	<1.0	<1.00	<1.0	<1.00	<1.0	<1.00	<1.0 J
Chloride	152	155	43.0	34.3	77.9	87.4	399
Hardness, as CaCO3	346	347	176	181	84.0	81.0	260
Nitrate-nitrogen	5.10	1.85	2.57	2.26	6.03	6.64	0.31
Sulfate	77.8	72.0	10.3	19.8	71.6	63.0	52.7
Total dissolved solids	763	794	287	323	261	293	794

mg/L Milligrams per liter.
NR Not requested.
CaCO3 Calcium carbonate.
J Estimated value.

Table 3-4. Concentrations of Leachate Indicator Parameters Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	SY-7	SY-8	SY-8	SY-9	SY-9	PK-10S	PK-10S
Sample Date:	12/2/93	11/4/93	12/1/93	11/1/93	11/29/93	11/4/93	12/1/93
Parameter (concentrations in mg/L)							
Ammonia-nitrogen	**0.35**	**0.21**	**0.13**	**0.76**	**0.61**	**0.35**	**0.05**
Bicarbonate alkalinity, as CaCO3	**112**	**59.8**	**62.0**	**190**	**131**	**23.2**	**24.2**
Carbonate	<1.00	<1.0	<1.00	<1.0	<1.00	<1.0	<1.00
Chloride	**808**	**32.3**	**32.7**	**39.3**	**47.2**	**15.2**	**13.7**
Hardness, as CaCO3	**282**	**103**	**106**	**246**	**172**	**68.8**	**67.8**
Nitrate-nitrogen	<0.10	<0.10	<0.10	<0.10	**0.07**	**7.33**	**8.04**
Sulfate	**58.9**	**78.2**	**80.7**	**68.3**	**4,530**	**39.9**	**51.4**
Total dissolved solids	**1,050**	**218**	**49.0**	**346**	**312**	**162**	**181**

mg/L Milligrams per liter.
NR Not requested.
CaCO3 Calcium carbonate.
J Estimated value.

Table 3-4. Concentrations of Leachate Indicator Parameters Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	PK-10I	(Rep-2)	PK-10I	(Rep-2)	PK-10D	PK-10D	RB-11S
Sample Date:	11/4/93	11/4/93	12/1/93	12/1/93	11/4/93	12/1/93	11/3/93
Parameter (concentrations in mg/L)							
Ammonia-nitrogen	39.1	39.3	37.9	41.0	<0.04	<0.04	<0.04
Bicarbonate alkalinity, as CaCO3	404	400 J	419	419	24.6	17.8	15.6
Carbonate	<1.0	<1.0 J	<1.00	<1.00	<1.0	<1.00	<1.0
Chloride	291	287	678	499	14.0	14.2	8.0
Hardness, as CaCO3	285	285	312	310	12.2	12.2	17.4
Nitrate-nitrogen	0.39	0.51	0.21	0.21	0.90	0.90	4.42
Sulfate	88.9	109	110	113	15.6	11.5	<10.0
Total dissolved solids	918	948	1,020	1,030	87.0	85.0	47.0

mg/L Milligrams per liter.
NR Not requested.
CaCO3 Calcium carbonate.
J Estimated value.

Table 3-4. Concentrations of Leachate Indicator Parameters Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	RB-11S	RB-11I	(Rep-1)	RB-11I	(Rep-1)	RB-11D	RB-11D
Sample Date:	11/30/93	11/3/93	11/3/93	11/30/93	11/30/93	11/3/93	11/30/93
Parameter (concentrations in mg/L)							
Ammonia-nitrogen	**0.09**	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Bicarbonate alkalinity, as CaCO3	**17.8**	**14.0**	**13.0**	**11.6**	**10.8**	**8.20**	**7.60**
Carbonate	<1.00	<1.0	<1.0	<1.00	<1.00	<1.0	<1.00
Chloride	**6.4**	**29.7**	**29.4**	**27.9**	**28.3**	**3.40**	<3.0
Hardness, as CaCO3	**19.2**	**87.2**	**86.6**	**89.8**	**89.4**	**3.60**	**4.4**
Nitrate-nitrogen	**2.15**	**13.2**	**12.9**	**13.3**	**13.4**	**0.24**	**0.62**
Sulfate	<10.0	**41.6**	**42.4**	<10.0	**34.2**	<10.0	<10.0
Total dissolved solids	**81.0**	**186**	**179**	**252**	**216**	**17.0**	**51.0**

mg/L Milligrams per liter.
NR Not requested.
CaCO3 Calcium carbonate.
J Estimated value.

Table 3-4. Concentrations of Leachate Indicator Parameters Detected in Groundwater Samples Collected from Monitoring Wells During the Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York.

Sample ID:	RW-12I	(Rep-3)	RW-12I	(Rep-3)	RW-12D	RW-12D	Field Blank
Sample Date:	11/5/93	11/5/93	12/2/93	12/2/93	11/5/93	12/2/93	11/3/93
Parameter (concentrations in mg/L)							
Ammonia-nitrogen	**16.2**	**17.6**	**14.9**	**13.4**	<0.04	**0.11**	NR
Bicarbonate alkalinity, as CaCO3	**167**	**446**	**162**	**162**	**73.8**	**80.4**	NR
Carbonate	<1.0	<1.0	<1.00	<1.00	<1.0	<1.00	NR
Chloride	**106**	**106**	**118**	**117**	**122**	**139**	NR
Hardness, as CaCO3	**169**	**166**	**164**	**161**	**132**	**144**	<1.0
Nitrate-nitrogen	**2.66**	**3.47**	**4.18**	**4.04**	**1.09**	**0.10**	NR
Sulfate	**30.5**	**33.8**	**48.2**	**46.1**	**31.7**	**54.3**	NR
Total dissolved solids	**345**	**348**	**408**	**422**	**320**	**511**	NR

mg/L Milligrams per liter.
NR Not requested.
CaCO3 Calcium carbonate.
J Estimated value.

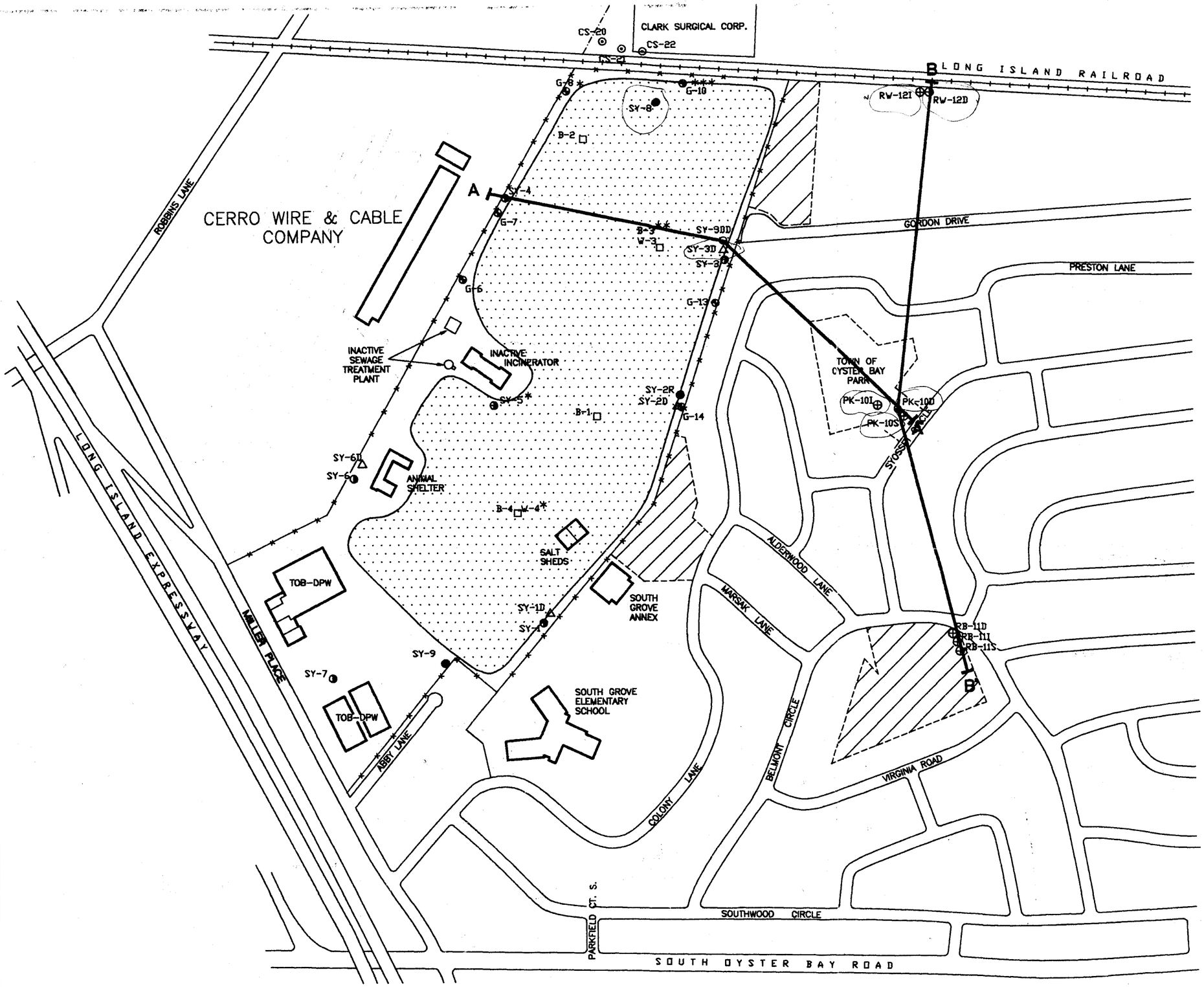
Table 3-5. Summary of Gas Well Monitoring Data, Syosset Landfill, Syosset, New York.

Well No.	February 25, 1994 Barometer (a) (inches of mercury)	Total VOCs (b) (ppmv)	Methane (c) (ppmv)	Barometer (a) (inches of mercury)	March 2, 1994 Barometer (a) (inches of mercury)	Total VOCs (b) (ppmv)	Methane (c) (ppmv)	Barometer (a) (inches of mercury)
G-6	30.01	--	0.6	29.98	30.41	--	--	30.23
G-7		20	520			20	--	
G-8 (d)		(d)	(d)			(d)	(d)	
G-10 (e)		(e)	(e)			(e)	(e)	
G-13		--	--			--	--	
G-14		--	--			--	--	
CS-20		--	--			--	--	
CS-21		--	--			--	--	
CS-22		--	--			--	--	

Well No.	March 7, 1994 Barometer (a) (inches of mercury)	Total VOCs (b) (ppmv)	Methane (c) (ppmv)	Barometer (a) (inches of mercury)
G-6	30.17	--	--	30.06
G-7		100	100	
G-8 (d)		(d)	(d)	
G-10 (e)		(e)	(e)	
G-13		--	--	
G-14		--	--	
CS-20		--	--	
CS-21		--	--	
CS-22		--	--	

Measurements made in field by Geraghty & Miller, Inc. using a Foxboro Model 128 organic vapor analyzer (OVA). Instrument calibrated using zero gas and methane standards.

(a) Barometer readings obtained from Newsday Weather Service before and after each measurement round.
(b) Measurements made using a standard OVA probe.
(c) Measurements made using an activated charcoal-filter OVA probe.
(d) Well destoyed.
(e) Well could not be located.
ppmv Parts per million by volume.
-- Not detected.



N

EXPLANATION

PK-10I ⊕	OFF-SITE MONITORING WELL INSTALLED BY GERAGHTY & MILLER INC. FOR THE OU-2 REMEDIAL INVESTIGATION
SY-3 ◑	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF ERM NORTHEAST
SY-2R ●	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3D △	ON-SITE DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
B-3 W-4 □	ON-SITE LANDFILL DIMENSION STUDY SOIL BORING/SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3DD ◒	EXPLORATORY BORING/DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. FOR THE OU-2 REMEDIAL INVESTIGATION
G-13 ◉	ON-SITE LANDFILL GAS MONITORING WELL
CS-20 ⊙	OFF-SITE GAS MONITORING WELL, INSTALLED BY GERAGHTY & MILLER, INC. DURING THE OU-2 REMEDIAL INVESTIGATION
*	DESTROYED MONITORING WELL
**	MONITORING WELL CAN NO LONGER BE SAMPLED DUE TO BEND IN WELL CASING
***	MONITORING WELL COULD NOT BE LOCATED
—*—*—*—	SITE BOUNDARY (FENCE)
	RECHARGE BASIN
	LANDFILL AREA
A—A'	LINE OF HYDROGEOLOGIC CROSS SECTION
TOB-DPW	TOWN OF OYSTER BAY-DEPARTMENT OF PUBLIC WORKS

0 500 FT

GERAGHTY & MILLER, INC.
Environmental Services

SCALE VERIFICATION

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:

USE TO VERIFY FIGURE REPRODUCTION SCALE

PROJECT NO.: NY0029008	FILE NO: 1584
DRAWING: LINEWELL	PLOT SIZE: 1"=300'
DRAFTED BY: VC	DATE: 3/9/94
CHECKED BY: SZ	DATE:
APPROVED BY: VG	DATE:

LOCATIONS OF GROUNDWATER MONITORING WELLS, GAS MONITORING WELLS, SOIL BORINGS, AND LINES OF HYDROGEOLGIC CROSS SECTION, SYOSSET LANDFILL SYOSSET, NEW YORK

FIGURE
1-2

EXPLANATION

- O-6A — LOCATION AND DESIGNATION OF NASSAU COUNTY OBSERVATION WELL.
- N7781 — LOCATION AND DESIGNATION OF PUBLIC SUPPLY WELL SAMPLED IN SEPTEMBER 1992 TO DETERMINE BACKGROUND WATER QUALITY.
- * — INDICATES THAT WELL WAS SAMPLED IN SEPTEMBER 1992 TO DETERMINE BACKGROUND WATER QUALITY.

0 4000 FT

GERAGHTY & MILLER, INC.
Environmental Services

SCALE VERIFICATION
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:
USE TO VERIFY FIGURE REPRODUCTION SCALE

PROJECT NO.: NY0840002	FILE NO: 1584
DRAWING: BASE-94	PLOT SIZE: 1"=4000'
DRAFTED BY: VC	DATE: 3/11/94
CHECKED BY: VJG	DATE: -
APPROVED BY: LH	DATE: -

LOCATIONS OF NASSAU COUNTY MONITORING WELLS AND SELECTED PUBLIC SUPPLY WELLS WITHIN APPROXIMATELY 2 MILES OF THE SYOSSET LANDFILL, SYOSSET, NEW YORK

FIGURE
2-1

SOUTH **A** — SYOSSET LANDFILL — NORTH **A'**

SY-4* | B3/W3 | SY-3DD | PK-10D

81.71 | 81.72 | 81.25 | 80.62 | 80.21 | 79.75 | 79.85 | 80.26

ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL

200, 180, 160, 140, 120, 100, 80, 60, 40, 20, MSL 0, -20, -40, -60, -80, -100, -120, -140, -160, -180, -200, -220, -240, -260, -280, -300, -320, -340, -360

?

CLEAN FILL

LANDFILL

SAND, COARSE TO FINE WITH GRAVEL (WITH OR WITHOUT SILT)

SAND, MEDIUM TO VERY FINE WITH CLAY STRINGERS (WITH OR WITHOUT CLAY)

CLAY (WITH OR WITHOUT SAND AND/OR SILT)

0 200 FT

VERTICAL EXXAGERATION = 5X

LOCATION AND DESIGNATION OF WELL CLUSTER

PK-10

LAND SURFACE

WATER TABLE

LITHOLOGIC CONTACT (DASHED WHERE APPROXIMATE)

GAMMA LOG

WELL SCREEN INTERVAL OF SHALLOW WELL

80.21 WATER-TABLE ELEVATION (FEET ABOVE MSL)

WELL SCREEN INTERVAL OF INTERMEDIATE WELL

79.75 POTENTIOMETRIC ELEVATION IN THE INTERMEDIATE ZONE (FEET ABOVE MSL)

WELL SCREEN INTERVAL OF DEEP WELL

79.85 POTENTIOMETRIC ELEVATION IN THE DEEP ZONE (FEET ABOVE MSL)

TOTAL DEPTH OF BOREHOLE

NOTES:

* MONITORING WELL INSTALLED BY ERM IN 1982

ALL WELLS INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. UNLESS OTHERWISE NOTED

ALL WATER LEVELS MEASURED ON NOVEMBER 23, 1993

MSL MEAN SEA LEVEL

GERAGHTY & MILLER, INC.
Environmental Services

SCALE VERIFICATION

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING

USE TO VERIFY FIGURE REPRODUCTION SCALE

PROJECT NO.:	NY0029008	FILE NO: 1584	
DRAWING:	SEC-AAG	PLOT SIZE:	
DRAFTED BY:	GS	DATE:	4-19-94
CHECKED BY:	LH	DATE:	
APPROVED BY:	VJG	DATE:	

NORTH-SOUTH HYDROGEOLOGIC CROSS SECTION A-A' SYOSSET LANDFILL, SYOSSET, NEW YORK

FIGURE 3-1

WEST **B** — **B'** EAST

LIRR — RW-12D — GORDON DRIVE — SYOSSET CIRCLE — PK-10D — BELMONT CIRCLE — RB-11D — RECHARGE BASIN

ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL

200 180 160 140 120 100 80 60 40 20 MSL 0 -20 -40 -60 -80 -100 -120 -140 -160 -180 -200 -220 -240 -260 -280 -300 -320

79.89 (1) — 80.21 — 79.75 — 79.87 — 80.53 — 79.70 — 79.85 — 79.65

SAND, COARSE TO FINE WITH GRAVEL (WITH OR WITHOUT SILT)

SAND, MEDIUM TO VERY FINE WITH CLAY STRINGERS (WITH OR WITHOUT SILT)

CLAY (WITH OR WITHOUT SAND AND/OR SILT)

0 200 FT

VERTICAL EXAGERATION = 5X

LOCATION AND DESIGNATION OF WELL CLUSTER (PK-10)

LAND SURFACE

WATER TABLE

LITHOLOGIC CONTACT (DASHED WHERE APPROXIMATE)

GAMMA LOG

WELL SCREEN INTERVAL OF SHALLOW WELL — 80.21 WATER-TABLE ELEVATION (FEET ABOVE MSL)

WELL SCREEN INTERVAL OF INTERMEDIATE WELL — 79.75 POTENTIOMETRIC ELEVATION IN THE INTERMEDIATE ZONE (FEET ABOVE MSL)

WELL SCREEN INTERVAL OF DEEP WELL — 79.85 POTENTIOMETRIC ELEVATION IN THE DEEP ZONE (FEET ABOVE MSL)

TOTAL DEPTH OF BOREHOLE

NOTES:

ALL WELLS INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. UNLESS OTHERWISE NOTED

ALL WATER LEVELS MEASURED ON NOVEMBER 23, 1993

MSL MEAN SEA LEVEL

GERAGHTY & MILLER, INC.
Environmental Services

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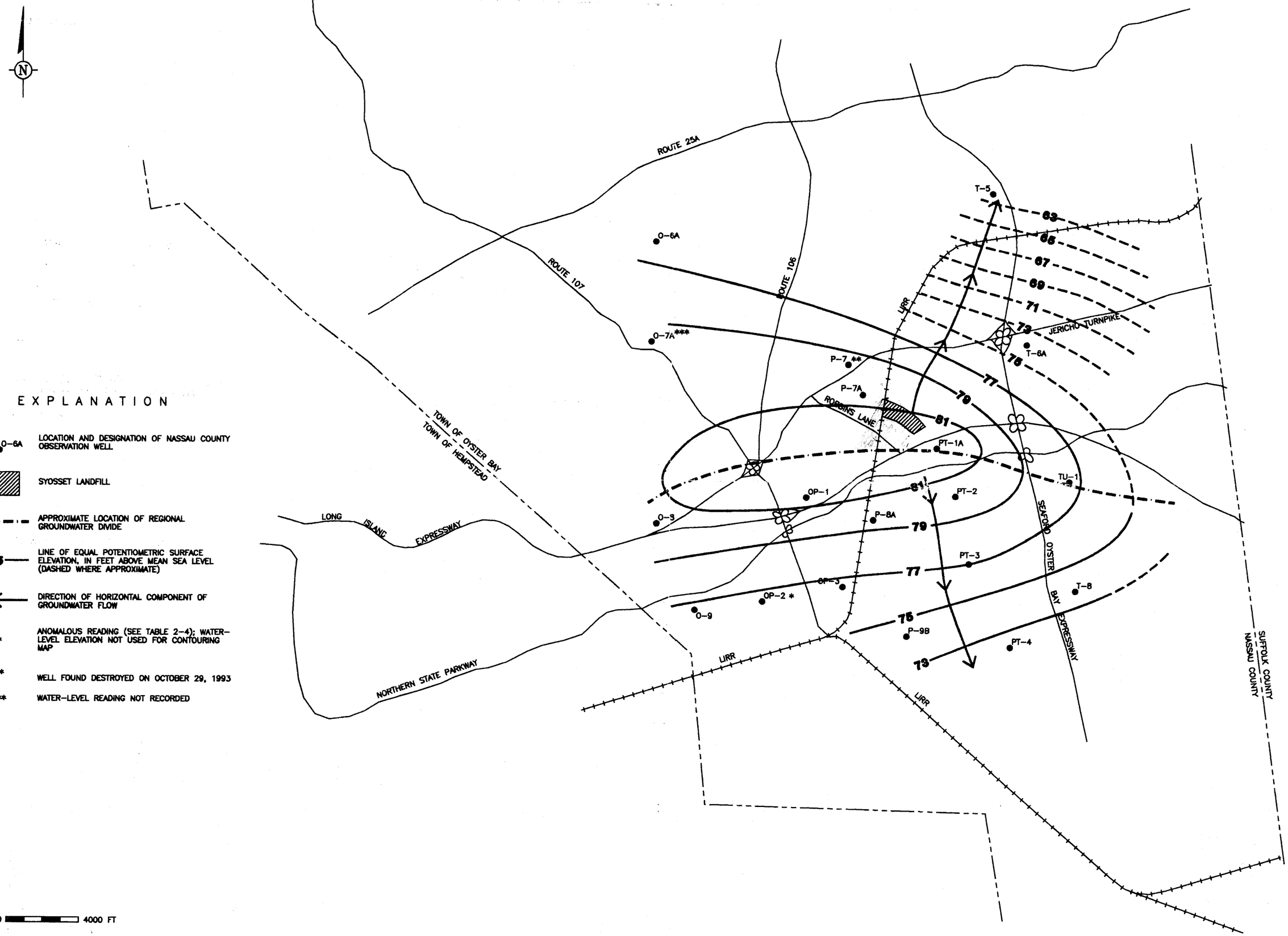
PROJECT NO.:	NY0029008	FILE NO:	1584
DRAWING:	SEC-BB	PLOT SIZE:	
DRAFTED BY:	GS/VC	DATE:	4/19/94
CHECKED BY:	LH	DATE:	
APPROVED BY:	VJG	DATE:	

EAST-WEST HYDROGEOLOGIC CROSS SECTION B-B'
SYOSSET LANDFILL, SYOSSET, NEW YORK

FIGURE 3-2



GERAGHTY & MILLER, INC.
Environmental Services

SCALE VERIFICATION

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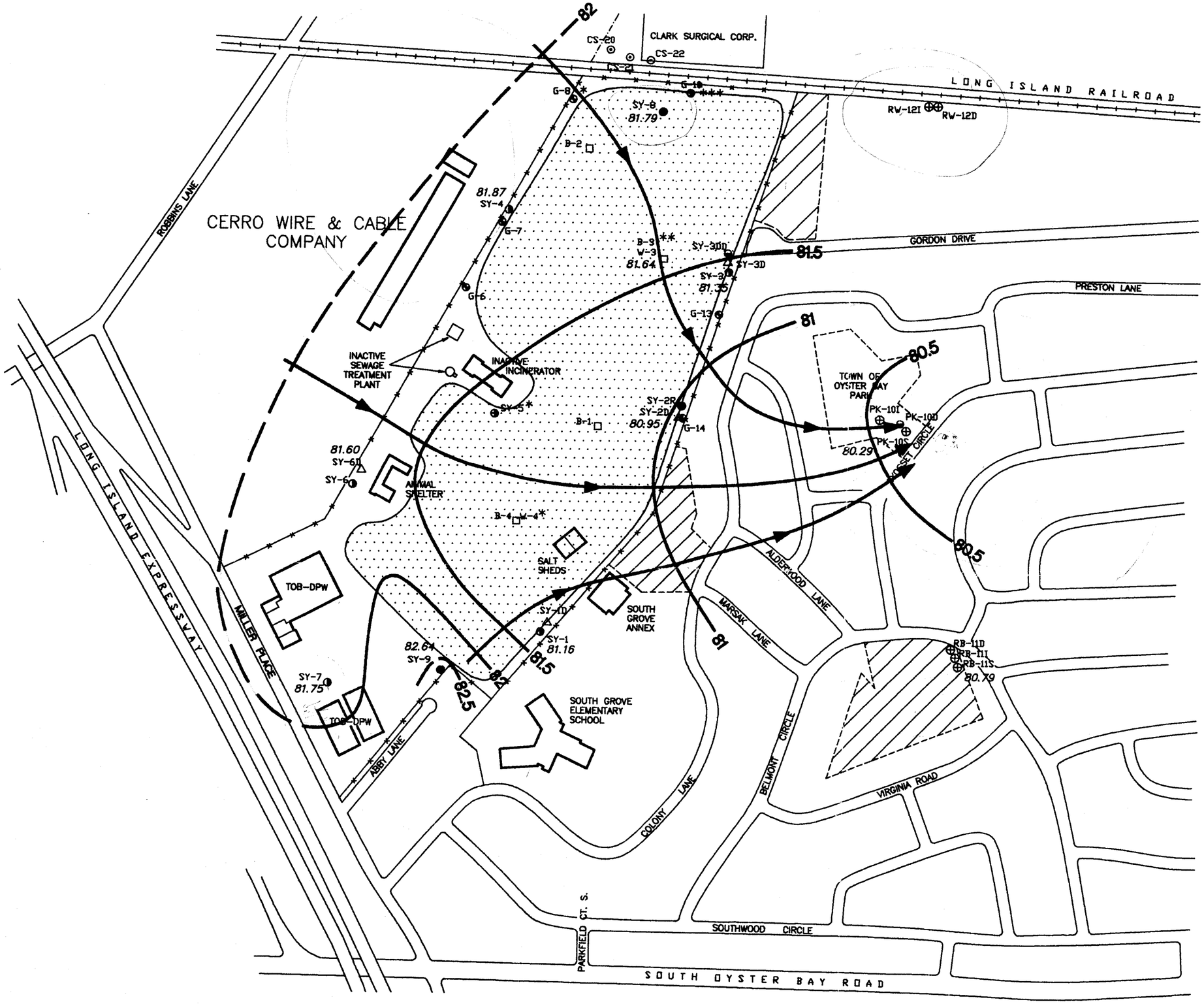
PROJECT NO.: NY0840.002	FILE NO: 1584
DRAWING: PS1093	PLOT SIZE: 1"=4000'
DRAFTED BY: VC	DATE: 3/9/94
CHECKED BY:	DATE:
APPROVED BY: VJG	DATE:

REGIONAL POTENTIMETRIC SURFACE OF THE SHALLOW ZONE OF THE MAGOTHY AQUIFER IN THE VICINITY OF THE SYOSSET LANDFILL ON OCTOBER 29, 1993, SYOSSET, NEW YORK

FIGURE **3-3**



EXPLANATION

PK-10I ⊕	OFF-SITE MONITORING WELL INSTALLED BY GERAGHTY & MILLER INC. FOR THE OU-2 REMEDIAL INVESTIGATION
SY-3 ◑	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF ERM NORTHEAST
SY-2R ●	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3D △	ON-SITE DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
B-3 W-4 □	ON-SITE LANDFILL DIMENSION STUDY SOIL BORING/SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3DD ◒	EXPLORATORY BORING/DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. FOR THE OU-2 REMEDIAL INVESTIGATION
G-13 ◔	ON-SITE LANDFILL GAS MONITORING WELL
CS-20 ⊙	OFF-SITE GAS MONITORING WELL, INSTALLED BY GERAGHTY & MILLER, INC. DURING THE OU-2 REMEDIAL INVESTIGATION
*	DESTROYED MONITORING WELL
**	MONITORING WELL CAN NO LONGER BE SAMPLED DUE TO BEND IN WELL CASING
***	MONITORING WELL COULD NOT BE LOCATED
—*—*—*—	SITE BOUNDARY (FENCE)
	RECHARGE BASIN
	LANDFILL AREA
—81—	LINE OF EQUAL POTENTIOMETRIC SURFACE ELEVATION IN FEET ABOVE MEAN SEA LEVEL (DASHED WHERE APPROXIMATE)
←	DIRECTION OF HORIZONTAL COMPONENT OF GROUNDWATER FLOW
80.79	POTENTIOMETRIC HEAD IN FEET ABOVE MEAN SEA LEVEL
TOB-DPW	TOWN OF OYSTER BAY-DEPARTMENT OF PUBLIC WORKS

0 500 FT

GERAGHTY & MILLER, INC.
Environmental Services

SCALE VERIFICATION

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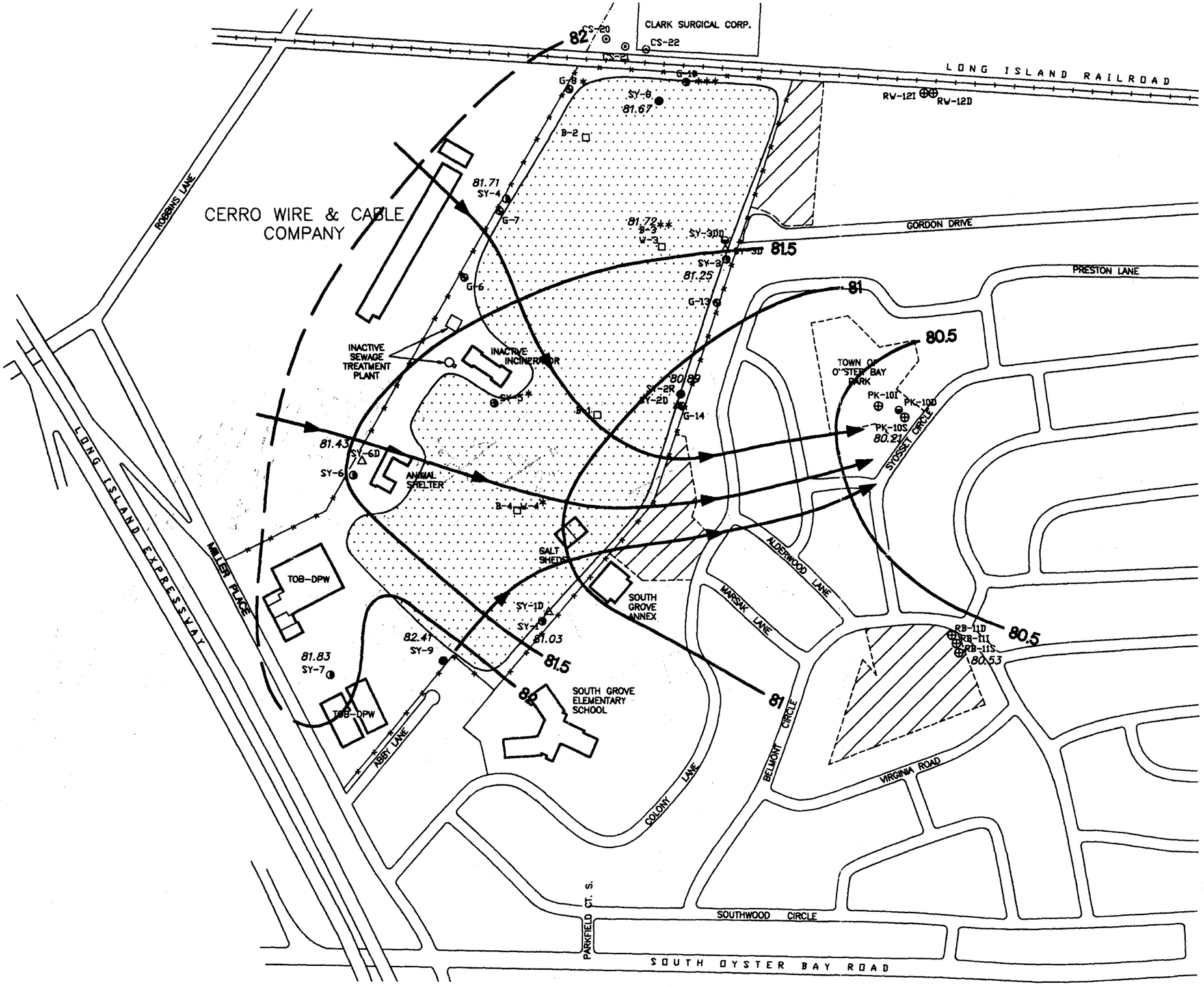
USE TO VERIFY FIGURE REPRODUCTION SCALE

PROJECT NO.:	NY0029008	FILE NO:	1584
DRAWING:	SZ-1093	PLOT SIZE:	1"=300'
DRAFTED BY:	VC	DATE:	3/8/94
CHECKED BY:	SZ	DATE:	
APPROVED BY:	VG	DATE:	

POTENTIOMETRIC SURFACE OF THE SHALLOW ZONE OF THE MAGOTHY AQUIFER ON OCTOBER 28, 1993 SYOSSET LANDFILL, SYOSSET, NEW YORK

FIGURE 3-4



N

EXPLANATION

PK-10I ⊕	OFF-SITE MONITORING WELL INSTALLED BY GERAGHTY & MILLER INC. FOR THE OU-2 REMEDIAL INVESTIGATION
SY-3 ◑	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF ERM NORTHEAST
SY-2R ●	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3D △	ON-SITE DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
B-3 W-4 □	ON-SITE LANDFILL DIMENSION STUDY SOIL BORING/SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3DD ◒	EXPLORATORY BORING/DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. FOR THE OU-2 REMEDIAL INVESTIGATION
G-13 ◔	ON-SITE LANDFILL GAS MONITORING WELL
CS-20 ⊙	OFF-SITE GAS MONITORING WELL, INSTALLED BY GERAGHTY & MILLER, INC. DURING THE OU-2 REMEDIAL INVESTIGATION
*	DESTROYED MONITORING WELL
**	MONITORING WELL CAN NO LONGER BE SAMPLED DUE TO BEND IN WELL CASING
***	MONITORING WELL COULD NOT BE LOCATED
——*	SITE BOUNDARY (FENCE)
	RECHARGE BASIN
	LANDFILL AREA
—81	LINE OF EQUAL POTENTIOMETRIC SURFACE ELEVATION IN FEET ABOVE MEAN SEA LEVEL (DASHED WHERE APPROXIMATE)
←	DIRECTION OF HORIZONTAL COMPONENT OF GROUNDWATER FLOW
80.21	POTENTIOMETRIC HEAD IN FEET ABOVE MEAN SEA LEVEL
TOB-DPW	TOWN OF OYSTER BAY-DEPARTMENT OF PUBLIC WORKS

0 ——— 500 FT

GERAGHTY & MILLER, INC.
Environmental Services

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USE TO VERIFY FIGURE REPRODUCTION SCALE

PROJECT NO.:	NY0029008	FILE NO:	1584
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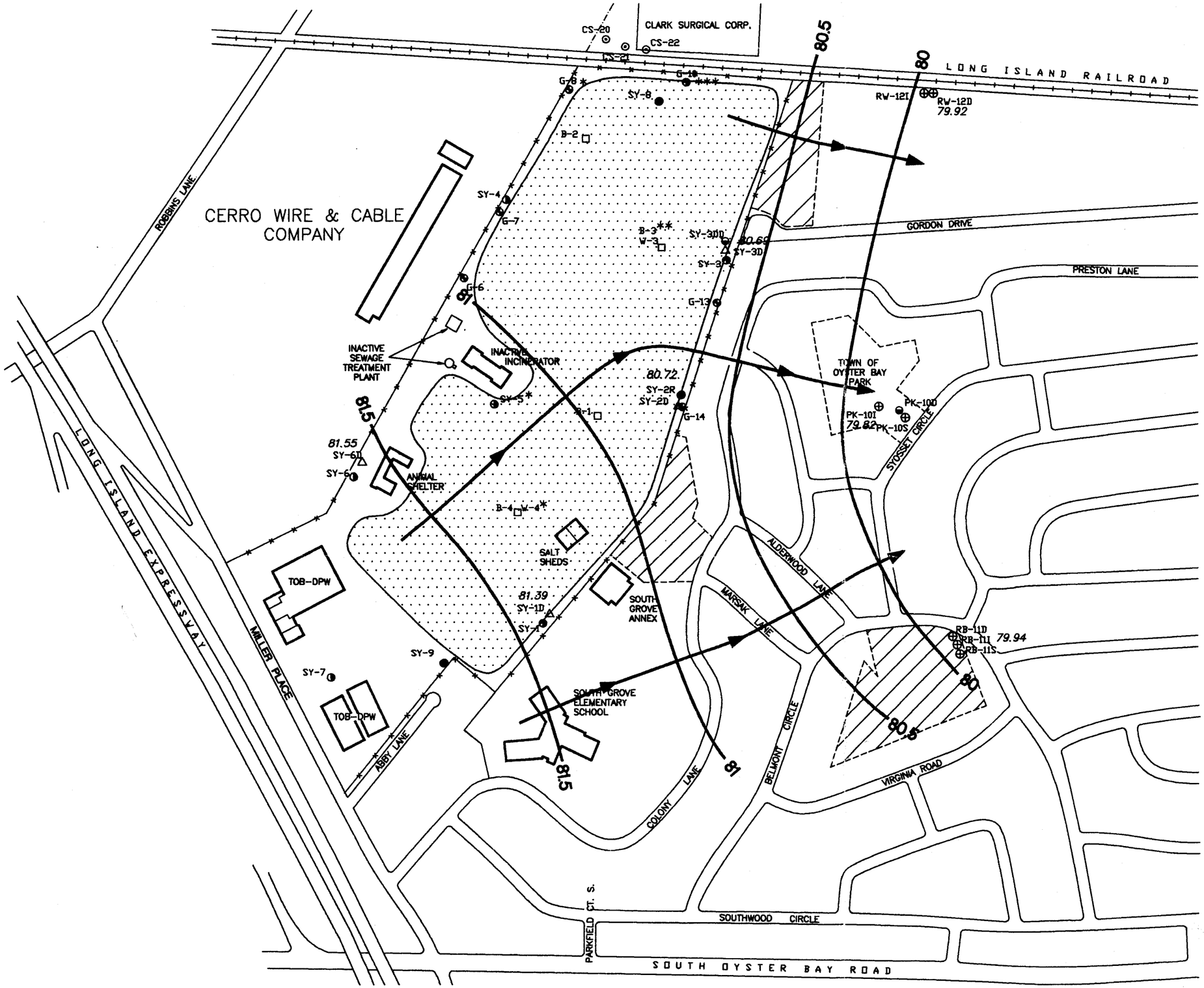
DRAFTED BY:	VC	DATE:	3/9/94
CHECKED BY:	SZ	DATE:	
APPROVED BY:	VG	DATE:	

POTENTIOMETRIC SURFACE OF THE SHALLOW ZONE OF THE MAGOTHY AQUIFER ON NOVEMBER 24, 1993 SYOSSET LANDFILL, SYOSSET, NEW YORK

FIGURE 3-5



EXPLANATION

PK-10I ⊕	OFF-SITE MONITORING WELL INSTALLED BY GERAGHTY & MILLER INC. FOR THE OU-2 REMEDIAL INVESTIGATION
SY-3 ◑	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF ERM NORTHEAST
SY-2R ●	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3D △	ON-SITE DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
B-3 W-4 □	ON-SITE LANDFILL DIMENSION STUDY SOIL BORING/SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3DD ◒	EXPLORATORY BORING/DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. FOR THE OU-2 REMEDIAL INVESTIGATION
G-13 ◉	ON-SITE LANDFILL GAS MONITORING WELL
CS-20 ⊙	OFF-SITE GAS MONITORING WELL, INSTALLED BY GERAGHTY & MILLER, INC. DURING THE OU-2 REMEDIAL INVESTIGATION
*	DESTROYED MONITORING WELL
**	MONITORING WELL CAN NO LONGER BE SAMPLED DUE TO BEND IN WELL CASING
***	MONITORING WELL COULD NOT BE LOCATED
-*-*-*-	SITE BOUNDARY (FENCE)
	RECHARGE BASIN
	LANDFILL AREA
81	LINE OF EQUAL POTENTIOMETRIC SURFACE ELEVATION IN FEET ABOVE MEAN SEA LEVEL (DASHED WHERE APPROXIMATE)
←	DIRECTION OF HORIZONTAL COMPONENT OF GROUNDWATER FLOW
80.79	POTENTIOMETRIC HEAD IN FEET ABOVE MEAN SEA LEVEL
TOB-DPW	TOWN OF OYSTER BAY-DEPARTMENT OF PUBLIC WORKS

0 500 FT

GERAGHTY & MILLER, INC.
Environmental Services

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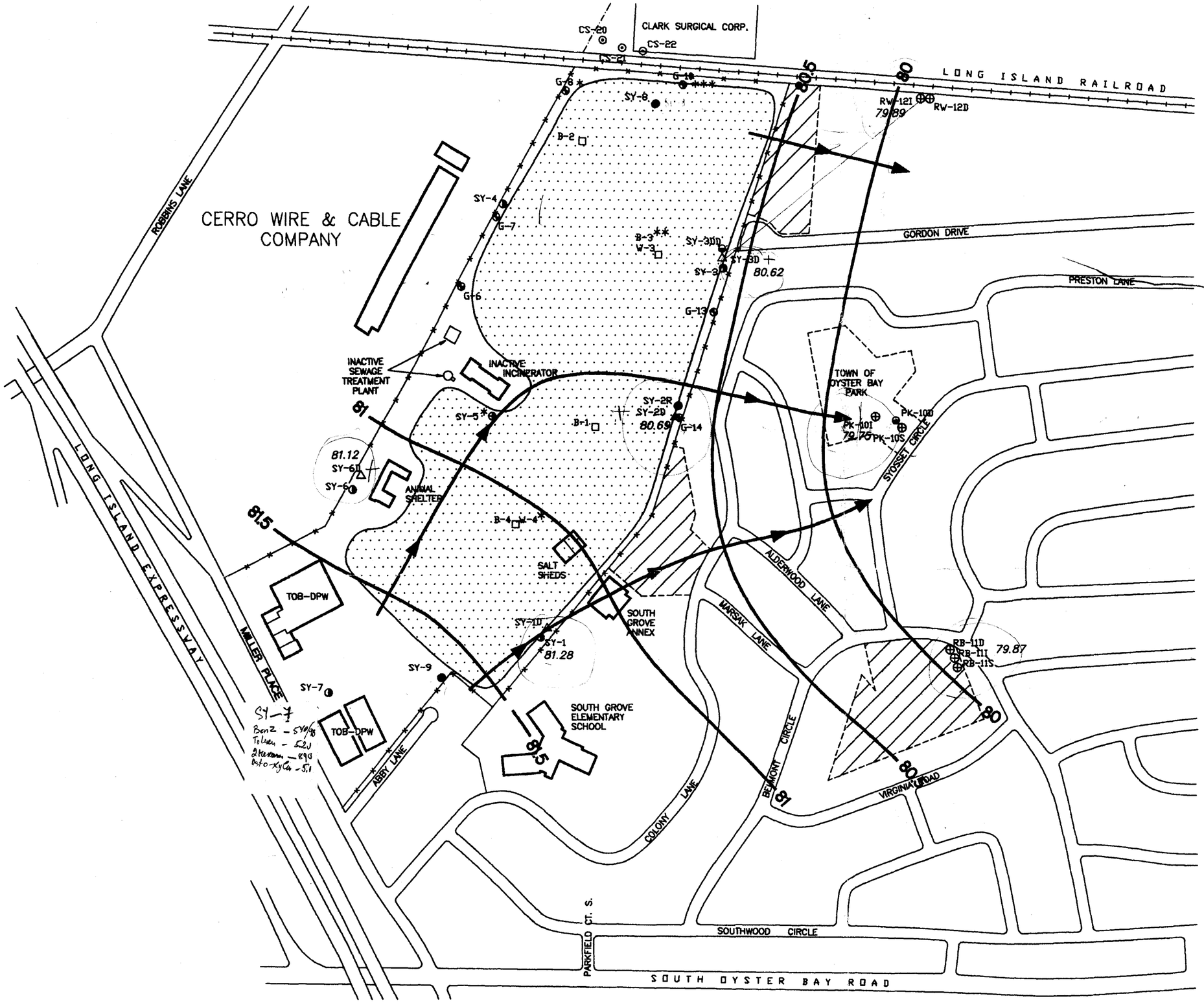
PROJECT NO.: NY0029008	FILE NO: 1584
DRAWING: IZ-1093	PLOT SIZE: 1"=300'
DRAFTED BY: VC	DATE: 3/9/94
CHECKED BY: SZ	DATE:
APPROVED BY: VG	DATE:

POTENTIOMETRIC SURFACE OF THE INTERMEDIATE ZONE OF THE MAGOTHY AQUIFER ON OCTOBER 28, 1993 SYOSSET LANDFILL, SYOSSET, NEW YORK

FIGURE
3-6



N

EXPLANATION

PK-10I ⊕	OFF-SITE MONITORING WELL INSTALLED BY GERAGHTY & MILLER INC. FOR THE OU-2 REMEDIAL INVESTIGATION
SY-3 ◑	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF ERM NORTHEAST
SY-2R ●	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3D △	ON-SITE DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
B-3 W-4 □	ON-SITE LANDFILL DIMENSION STUDY SOIL BORING/SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3DD ◒	EXPLORATORY BORING/DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. FOR THE OU-2 REMEDIAL INVESTIGATION
G-13 ◔	ON-SITE LANDFILL GAS MONITORING WELL
CS-20 ⊙	OFF-SITE GAS MONITORING WELL, INSTALLED BY GERAGHTY & MILLER, INC. DURING THE OU-2 REMEDIAL INVESTIGATION
*	DESTROYED MONITORING WELL
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***	MONITORING WELL COULD NOT BE LOCATED
——*	SITE BOUNDARY (FENCE)
	RECHARGE BASIN
	LANDFILL AREA
—81	LINE OF EQUAL POTENTIOMETRIC SURFACE ELEVATION IN FEET ABOVE MEAN SEA LEVEL (DASHED WHERE APPROXIMATE)
←	DIRECTION OF HORIZONTAL COMPONENT OF GROUNDWATER FLOW
80.79	POTENTIOMETRIC HEAD IN FEET ABOVE MEAN SEA LEVEL
TOB-DPW	TOWN OF OYSTER BAY-DEPARTMENT OF PUBLIC WORKS

0 ——— 500 FT

GERAGHTY & MILLER, INC.
Environmental Services

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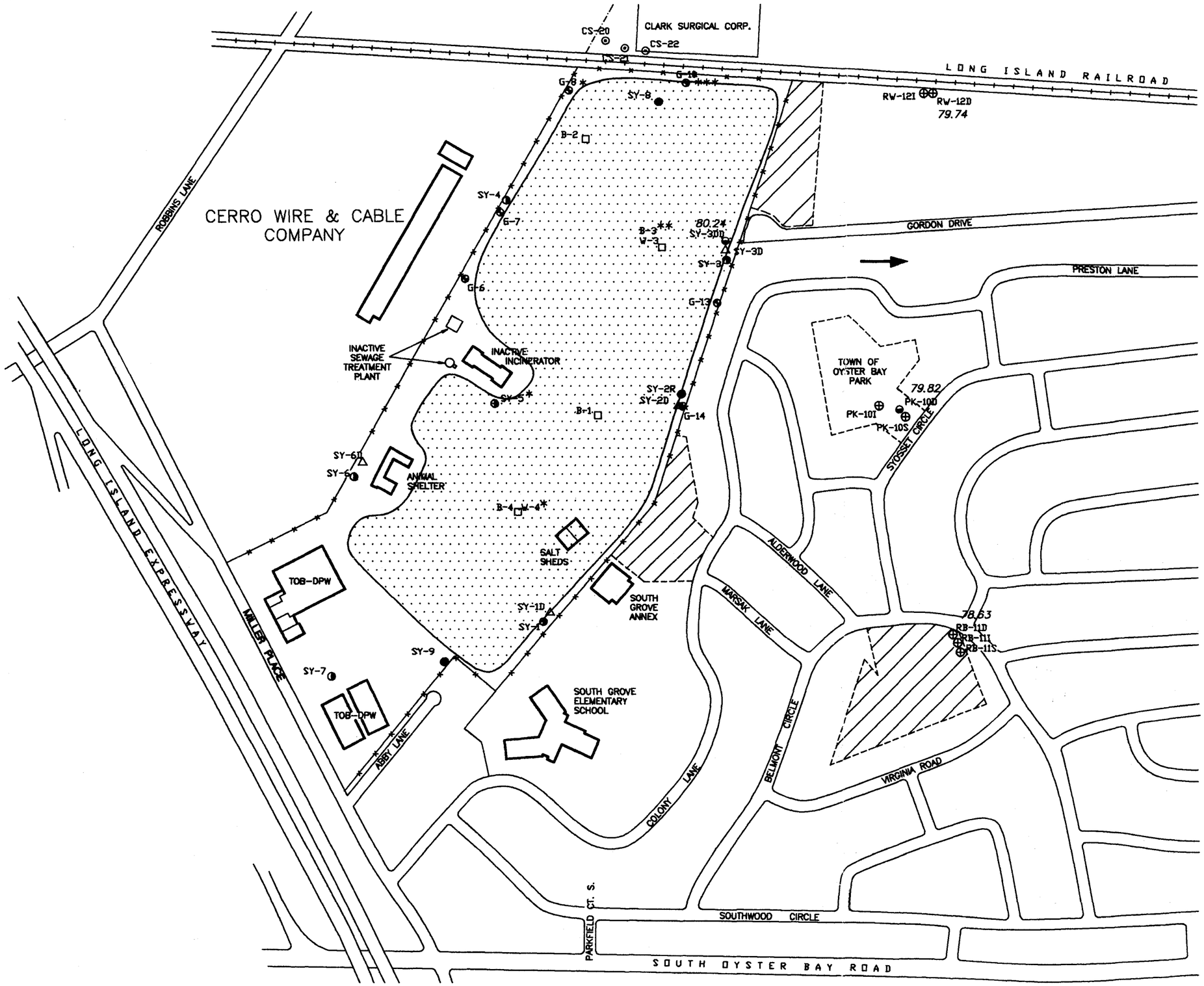
PROJECT NO.: NY0029008	FILE NO: 1584
DRAWING: IZ-1193	PLOT SIZE: 1"=300'
DRAFTED BY: VC	DATE: 3/9/94
CHECKED BY: SZ	DATE:
APPROVED BY: VG	DATE:

POTENTIOMETRIC SURFACE OF THE INTERMEDIATE ZONE OF THE MAGOTHY AQUIFER ON NOVEMBER 24, 1993 SYOSSET LANDFILL, SYOSSET, NEW YORK

FIGURE 3-7



EXPLANATION

PK-10I ⊕	OFF-SITE MONITORING WELL INSTALLED BY GERAGHTY & MILLER INC. FOR THE OU-2 REMEDIAL INVESTIGATION
SY-3 ◐	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF ERM NORTHEAST
SY-2R ●	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3D △	ON-SITE DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
B-3 W-4 □	ON-SITE LANDFILL DIMENSION STUDY SOIL BORING/SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3DD ◒	EXPLORATORY BORING/DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. FOR THE OU-2 REMEDIAL INVESTIGATION
G-13 ◍	ON-SITE LANDFILL GAS MONITORING WELL
CS-20 ⊙	OFF-SITE GAS MONITORING WELL, INSTALLED BY GERAGHTY & MILLER, INC. DURING THE OU-2 REMEDIAL INVESTIGATION
*	DESTROYED MONITORING WELL
**	MONITORING WELL CAN NO LONGER BE SAMPLED DUE TO BEND IN WELL CASING
***	MONITORING WELL COULD NOT BE LOCATED
	SITE BOUNDARY (FENCE)
	RECHARGE BASIN
	LANDFILL AREA
	DIRECTION OF HORIZONTAL COMPONENT OF GROUNDWATER FLOW
80.79	POTENTIOMETRIC HEAD IN FEET ABOVE MEAN SEA LEVEL
TOB-DPW	TOWN OF OYSTER BAY-DEPARTMENT OF PUBLIC WORKS

0 500 FT

GERAGHTY & MILLER, INC.
Environmental Services

SCALE VERIFICATION
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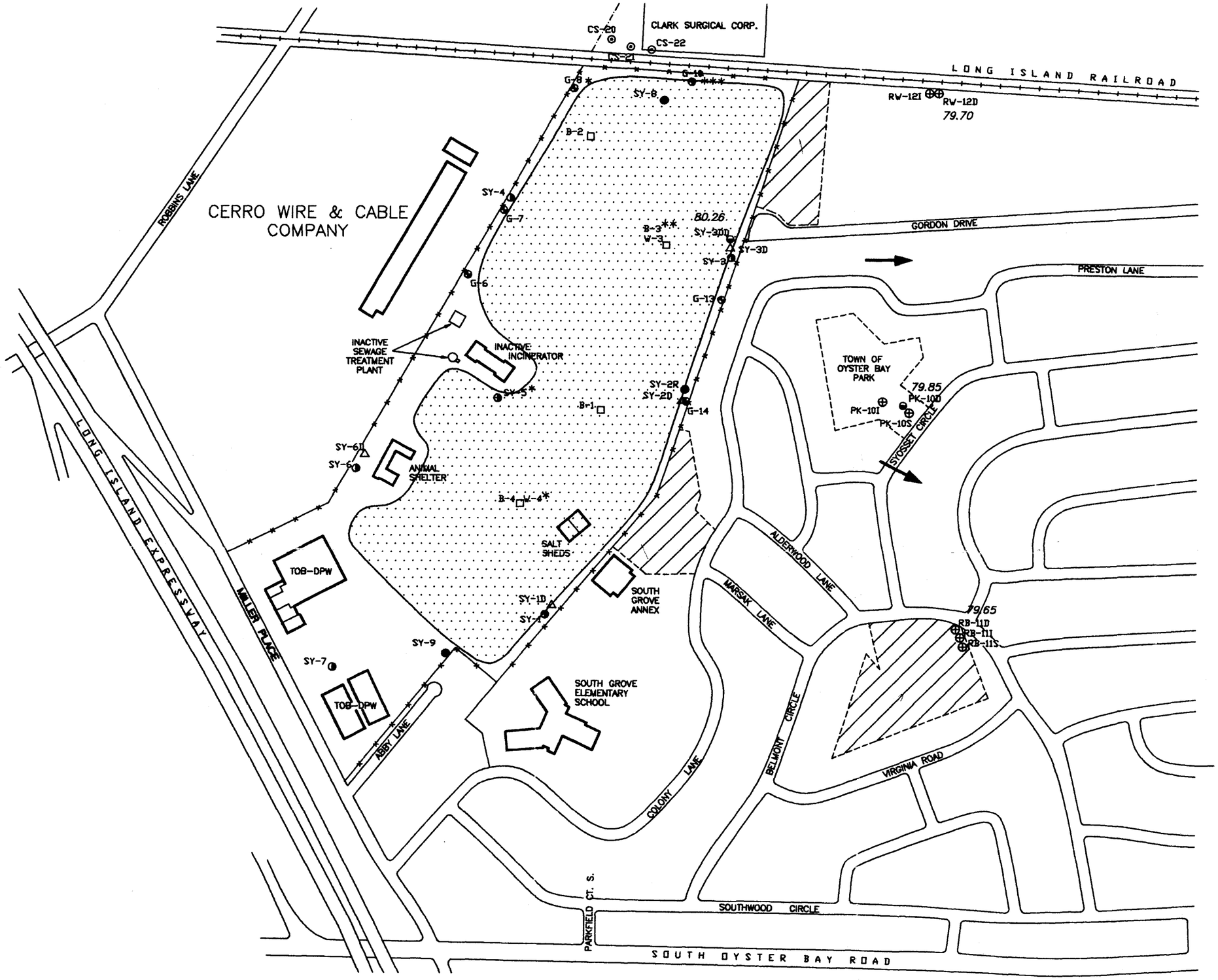
PROJECT NO.: NY0029008	FILE NO: 1584
DRAWING: DZ-1093	PLOT SIZE: 1"=300'
DRAFTED BY: VC	DATE: 3/9/94
CHECKED BY: SZ	DATE:
APPROVED BY: VG	DATE:

APPROXIMATE DIRECTION OF GROUNDWATER FLOW IN THE DEEP ZONE OF THE MAGOTHY AQUIFER ON OCTOBER 28, 1993 SYOSSET LANDFILL, SYOSSET, NEW YORK

FIGURE
3-8



EXPLANATION

- PK-10I ⊕ — OFF-SITE MONITORING WELL INSTALLED BY GERAGHTY & MILLER INC. FOR THE OU-2 REMEDIAL INVESTIGATION
- SY-3 ◑ — ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF ERM NORTHEAST
- SY-2R ● — ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
- SY-3D △ — ON-SITE DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
- B-3 W-4 □ — ON-SITE LANDFILL DIMENSION STUDY SOIL BORING/SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
- SY-3DD ◒ — EXPLORATORY BORING/DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. FOR THE OU-2 REMEDIAL INVESTIGATION
- G-13 ◒ — ON-SITE LANDFILL GAS MONITORING WELL
- CS-20 ⊙ — OFF-SITE GAS MONITORING WELL, INSTALLED BY GERAGHTY & MILLER, INC. DURING THE OU-2 REMEDIAL INVESTIGATION
- * — DESTROYED MONITORING WELL
- ** — MONITORING WELL CAN NO LONGER BE SAMPLED DUE TO BEND IN WELL CASING
- *** — MONITORING WELL COULD NOT BE LOCATED
- *—*—* — SITE BOUNDARY (FENCE)
- RECHARGE BASIN
- LANDFILL AREA
- DIRECTION OF HORIZONTAL COMPONENT OF GROUNDWATER FLOW
- 79.85 — POTENTIOMETRIC HEAD IN FEET ABOVE MEAN SEA LEVEL
- TOB-DPW — TOWN OF OYSTER BAY-DEPARTMENT OF PUBLIC WORKS

0 500 FT

GERAGHTY & MILLER, INC.
Environmental Services

SCALE VERIFICATION

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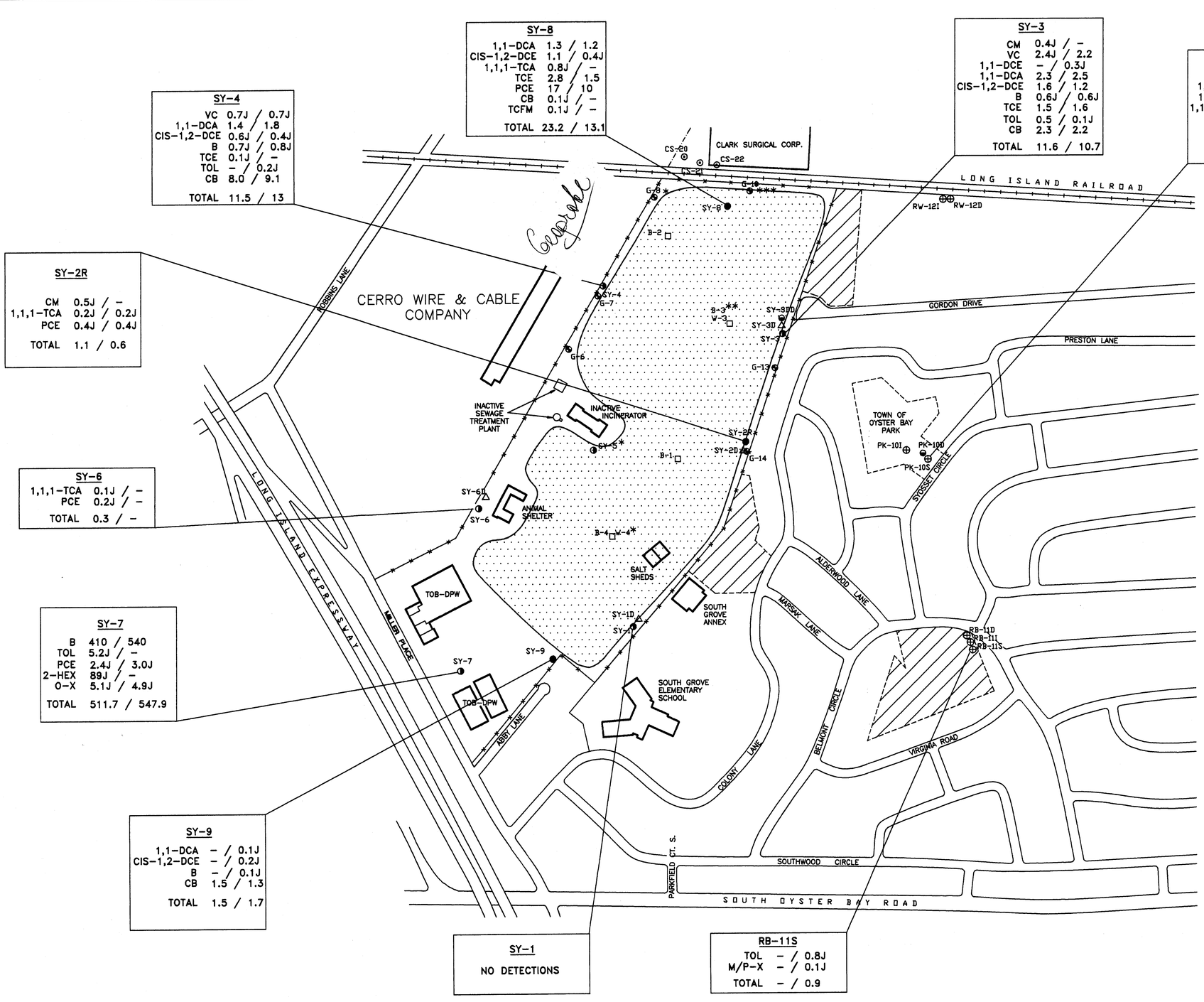
PROJECT NO.:	NY0029008	FILE NO:	1584
DRAWING:	DZ-1193	PLOT SIZE:	1"=300'
DRAFTED BY:	VC	DATE:	3/9/94
CHECKED BY:	SZ	DATE:	
APPROVED BY:	VG	DATE:	

APPROXIMATE DIRECTION OF GROUNDWATER FLOW IN THE DEEP ZONE OF THE MAGOTHY AQUIFER ON NOVEMBER 24, 1993 SYOSSET LANDFILL, SYOSSET, NEW YORK

FIGURE 3-9



EXPLANATION

PK-10I ⊕	OFF-SITE MONITORING WELL INSTALLED BY GERAGHTY & MILLER INC. FOR THE OU-2 REMEDIAL INVESTIGATION
SY-3 ◑	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF ERM NORTHEAST
SY-2R ●	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3D △	ON-SITE DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
B-3 W-4 □	ON-SITE LANDFILL DIMENSION STUDY SOIL BORING/SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3DD ◒	EXPLORATORY BORING/DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. FOR THE OU-2 REMEDIAL INVESTIGATION
G-13 ⊗	ON-SITE LANDFILL GAS MONITORING WELL
CS-20 ⊙	OFF-SITE GAS MONITORING WELL, INSTALLED BY GERAGHTY & MILLER, INC. DURING THE OU-2 REMEDIAL INVESTIGATION
*	DESTROYED MONITORING WELL
**	MONITORING WELL CAN NO LONGER BE SAMPLED DUE TO BEND IN WELL CASING
***	MONITORING WELL COULD NOT BE LOCATED
–×–×–	SITE BOUNDARY (FENCE)
	RECHARGE BASIN
	LANDFILL AREA

CM	CHLOROMETHANE
VC	VINYL CHLORIDE
1,1-DCE	1,1 DICHLOROETHENE
1,1-DCA	1,1 DICHLOROETHANE
CIS-1,2-DCE	CIS 1,2 DICHLOROETHENE
1,1,1-TCA	1,1,1 TRICHLOROETHANE
B	BENZENE
TCE	TRICHLOROETHENE
TOL	TOLUENE
PCE	TETRACHLOROETHENE
CB	CHLOROBENZENE
TCFM	TRICHLOROFLUOROMETHANE
2-HEX	2-HEXANONE
DCDFM	DICHLORODIFLUOROMETHANE
O-X	ORTHO-XYLENE
M/P-X	META/PARA XYLENE
–	NOT DETECTED
J	ESTIMATED VALUE
/	CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS FOR NOVEMBER/DECEMBER SAMPLING ROUND IN MICROGRAMS PER LITER (ug/L)
TOB-DPW	TOWN OF OYSTER BAY–DEPARTMENT OF PUBLIC WORKS

0 500 FT

GERAGHTY & MILLER, INC.
Environmental Services

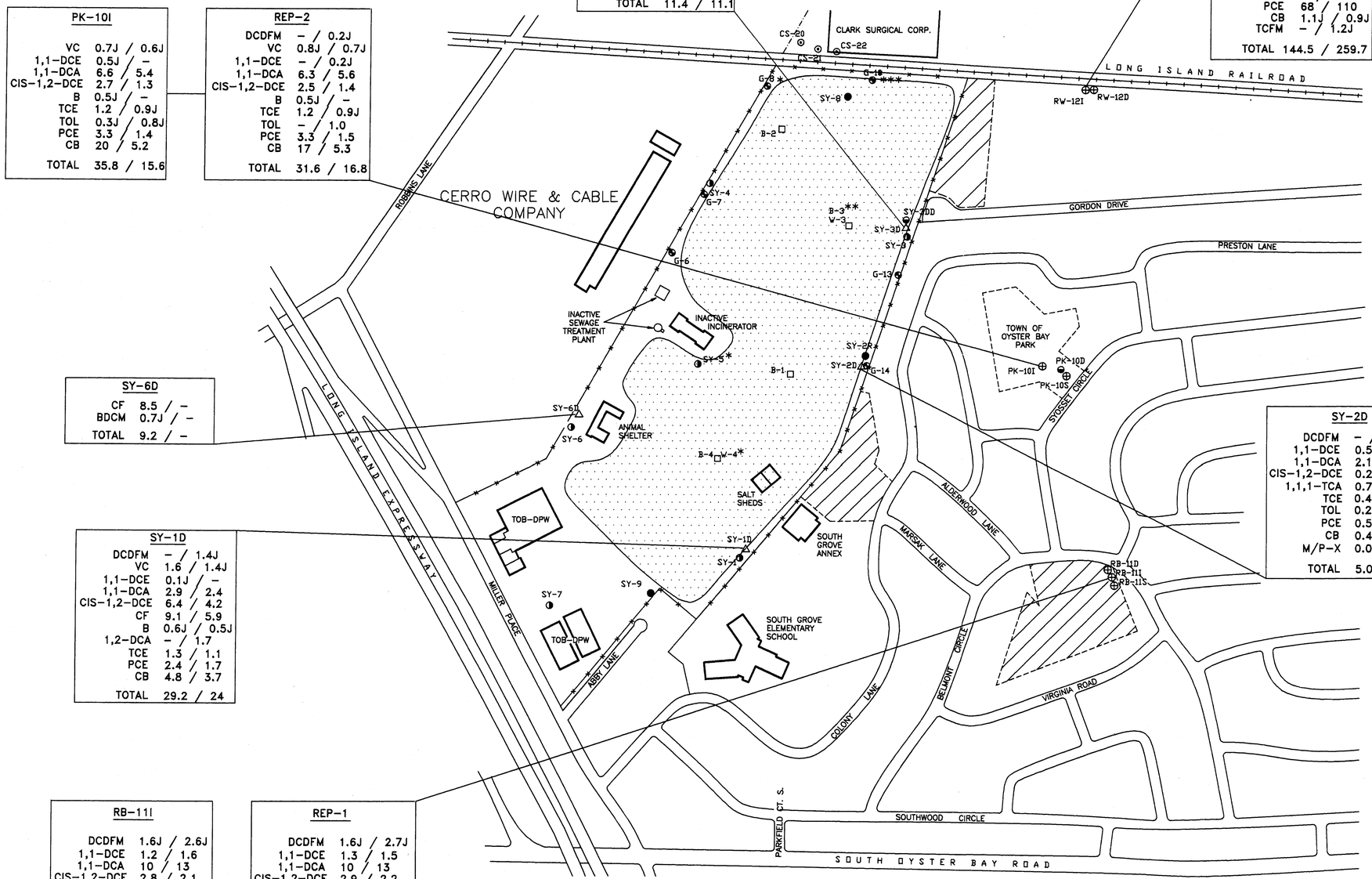
SCALE VERIFICATION
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:
USE TO VERIFY FIGURE REPRODUCTION SCALE

REV. NO.	DATE	DESCRIPTION	BY	APPR.

PROJECT NO.: NY029008	FILE NO: 1584
DRAWING: VOC-SHAL	PLOT SIZE: 1"=250'
DRAFTED BY: V. CARUNCHO	DATE: 3/10/94
CHECKED BY: L. HENDRICKS	DATE: –
APPROVED BY: V. GLASSER	DATE: –

CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS DETECTED IN SITE MONITORING WELLS SCREENED IN THE SHALLOW ZONE OF THE MAGOTHY AQUIFER SECOND OPERABLE UNIT REMEDIAL INVESTIGATION
SYOSSET LANDFILL, SYOSSET, NEW YORK

FIGURE
3-10



SY-3D

VC	0.6J / 0.6J
1,1-DCA	1.5 / 1.6
CIS-1,2-DCE	0.7J / 0.6J
B	1.8 / 1.8
TCE	0.9J / 0.9J
TOL	0.4J / 0.2J
CB	5.5 / 5.4
TOTAL	11.4 / 11.1

RW-12I

VC	– / 0.6J
1,1-DCE	13 / 26
1,1-DCA	11 / 17
CIS-1,2-DCE	5.2 / 5.7
1,1,1-TCA	40 / 75
B	– / 0.5J
TCE	6.2 / 9.8
TOL	– / 13
PCE	68 / 110
CB	1.1J / 0.9J
TCFM	– / 1.2J
TOTAL	144.5 / 259.7

REP-3

1,1-DCE	15 / 27
1,1-DCA	13 / 17
CIS-1,2-DCE	5.7 / 5.9
1,1,1-TCA	40 / 75
B	– / 0.5J
TCE	6.3 / 9.9
TOL	– / 12
PCE	71 / 110
CB	1.3J / 10.9J
TCFM	– / 1.2J
TOTAL	152.3 / 259.4

PK-10I

VC	0.7J / 0.6J
1,1-DCE	0.5J / –
1,1-DCA	6.6 / 5.4
CIS-1,2-DCE	2.7 / 1.3
B	0.5J / –
TCE	1.2 / 0.9J
TOL	0.3J / 0.8J
PCE	3.3 / 1.4
CB	20 / 5.2
TOTAL	35.8 / 15.6

REP-2

DCDFM	– / 0.2J
VC	0.8J / 0.7J
1,1-DCE	– / 0.2J
1,1-DCA	6.3 / 5.6
CIS-1,2-DCE	2.5 / 1.4
B	0.5J / –
TCE	1.2 / 0.9J
TOL	– / 1.0
PCE	3.3 / 1.5
CB	17 / 5.3
TOTAL	31.6 / 16.8

SY-6D

CF	8.5 / –
BDCM	0.7J / –
TOTAL	9.2 / –

SY-2D

DCDFM	– / 0.2J
1,1-DCE	0.5J / 0.7J
1,1-DCA	2.1 / 3.6
CIS-1,2-DCE	0.2J / 0.2J
1,1,1-TCA	0.7J / 1.4
TCE	0.4J / 0.7J
TOL	0.2J / –
PCE	0.5J / 0.5J
CB	0.4J / 0.6J
M/P-X	0.08J / –
TOTAL	5.08 / 7.9

SY-1D

DCDFM	– / 1.4J
VC	1.6 / 1.4J
1,1-DCE	0.1J / –
1,1-DCA	2.9 / 2.4
CIS-1,2-DCE	6.4 / 4.2
CF	9.1 / 5.9
B	0.6J / 0.5J
1,2-DCA	– / 1.7
TCE	1.3 / 1.1
PCE	2.4 / 1.7
CB	4.8 / 3.7
TOTAL	29.2 / 24

RB-11I

DCDFM	1.6J / 2.6J
1,1-DCE	1.2 / 1.6
1,1-DCA	10 / 13
CIS-1,2-DCE	2.8 / 2.1
1,1,1-TCA	3.4 / 4.8
TCE	3.0 / 3.9
TOL	0.6J / 0.3J
PCE	19 / 23
TCFM	– / 0.9J
TOTAL	41.6 / 52.2

REP-1

DCDFM	1.6J / 2.7J
1,1-DCE	1.3 / 1.5
1,1-DCA	10 / 13
CIS-1,2-DCE	2.9 / 2.2
1,1,1-TCA	3.4 / 4.9
TCE	3.0 / 4.0
TOL	0.6J / 0.3J
PCE	19 / 23
TCFM	– / 0.9J
TOTAL	41.8 / 52.5

0 500 FT

EXPLANATION

- PK-10I ⊕ — OFF-SITE MONITORING WELL INSTALLED BY GERAGHTY & MILLER INC. FOR THE OU-2 REMEDIAL INVESTIGATION
- SY-3 ◑ — ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF ERM NORTHEAST
- SY-2R ● — ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
- SY-3D △ — ON-SITE DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
- B-3 W-4 □ — ON-SITE LANDFILL DIMENSION STUDY SOIL BORING/SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
- SY-3DD ◒ — EXPLORATORY BORING/DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. FOR THE OU-2 REMEDIAL INVESTIGATION
- G-13 ⊗ — ON-SITE LANDFILL GAS MONITORING WELL
- CS-20 ⊙ — OFF-SITE GAS MONITORING WELL, INSTALLED BY GERAGHTY & MILLER, INC. DURING THE OU-2 REMEDIAL INVESTIGATION
- * — DESTROYED MONITORING WELL
- ** — MONITORING WELL CAN NO LONGER BE SAMPLED DUE TO BEND IN WELL CASING
- *** — MONITORING WELL COULD NOT BE LOCATED
- SITE BOUNDARY (FENCE)
- RECHARGE BASIN
- LANDFILL AREA

VC	VINYL CHLORIDE
1,1-DCE	1,1 DICHLOROETHENE
1,1-DCA	1,1 DICHLOROETHANE
CIS-1,2-DCE	CIS 1,2 DICHLOROETHENE
1,1,1-TCA	1,1,1 TRICHLOROETHANE
B	BENZENE
TCE	TRICHLOROETHENE
TOL	TOLUENE
PCE	TETRACHLOROETHENE
CB	CHLOROBENZENE
TCFM	TRICHLOROFLUOROMETHANE
BDCM	BROMODICHLOROMETHANE
DCDFM	DICHLORODIFLUOROMETHANE
M/P-X	META/PARA-XYLENE
–	NOT DETECTED
J	ESTIMATED VALUE
/	CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS FOR NOVEMBER/DECEMBER SAMPLING ROUND IN MICROGRAMS PER LITER (ug/L)
TOB-DPW	TOWN OF OYSTER BAY-DEPARTMENT OF PUBLIC WORKS

GERAGHTY & MILLER, INC.
Environmental Services

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DRAFTED BY:	V. CARUNCHO	DATE:	3/10/94
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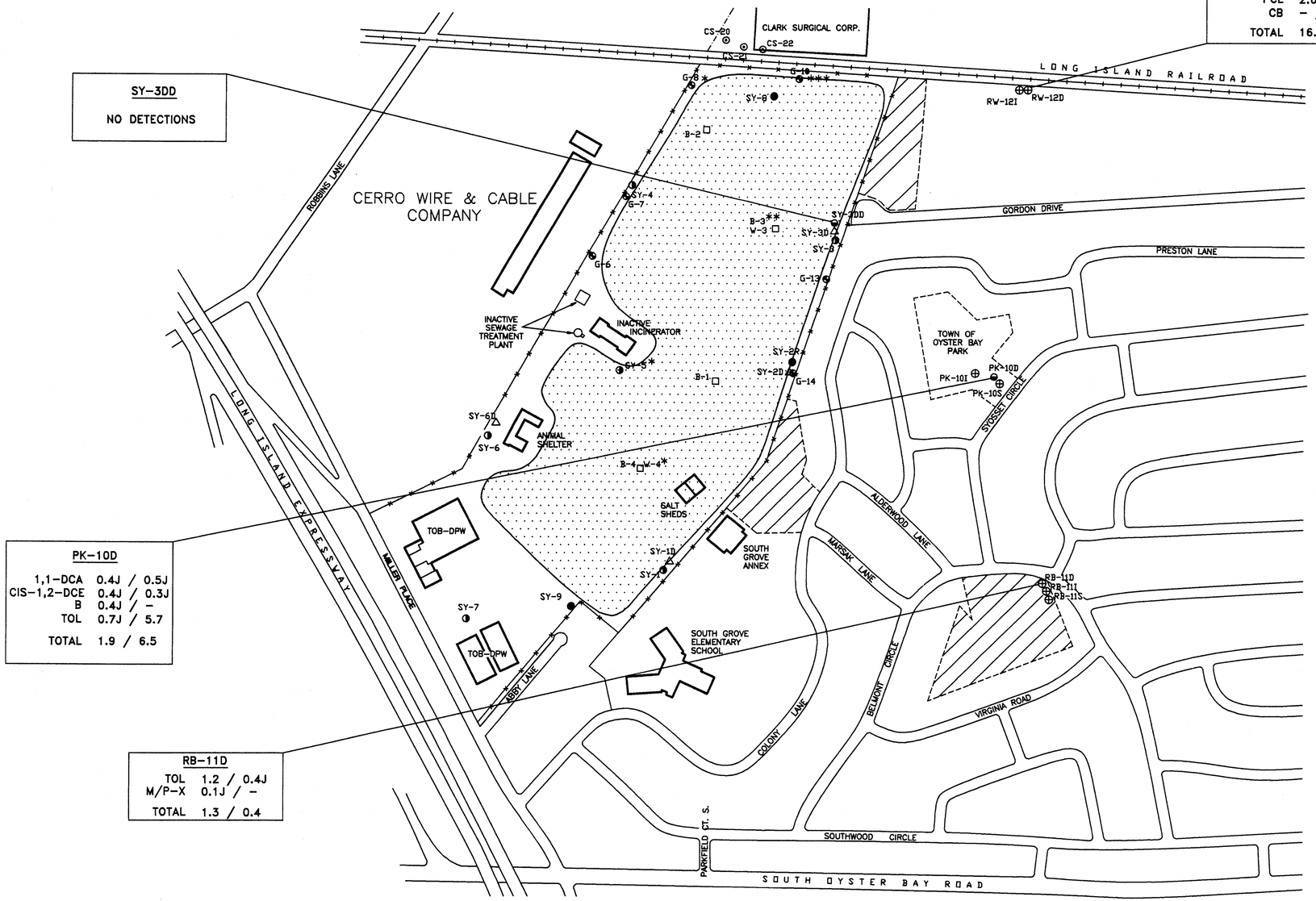
CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS DETECTED IN SITE MONITORING WELLS SCREENED IN THE INTERMEDIATE ZONE OF THE MAGOTHY AQUIFER SECOND OPERABLE UNIT REMEDIAL INVESTIGATION
SYOSSET LANDFILL, SYOSSET, NEW YORK

FIGURE
3-11



EXPLANATION

PK-10I ⊕	OFF-SITE MONITORING WELL INSTALLED BY GERAGHTY & MILLER INC. FOR THE OU-2 REMEDIAL INVESTIGATION
SY-3 ◑	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF ERM NORTHEAST
SY-2R ●	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3D △	ON-SITE DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
B-3 W-4 □	ON-SITE LANDFILL DIMENSION STUDY SOIL BORING/SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3DD ◒	EXPLORATORY BORING/DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. FOR THE OU-2 REMEDIAL INVESTIGATION
G-13 ⊗	ON-SITE LANDFILL GAS MONITORING WELL
CS-20 ⊙	OFF-SITE GAS MONITORING WELL, INSTALLED BY GERAGHTY & MILLER, INC. DURING THE OU-2 REMEDIAL INVESTIGATION
*	DESTROYED MONITORING WELL
**	MONITORING WELL CAN NO LONGER BE SAMPLED DUE TO BEND IN WELL CASING
***	MONITORING WELL COULD NOT BE LOCATED
	SITE BOUNDARY (FENCE)
	RECHARGE BASIN
	LANDFILL AREA
VC	VINYL CHLORIDE
1,1-DCA	1,1 DICHLOROETHANE
CIS-1,2-DCE	CIS 1,2 DICHLOROETHENE
B	BENZENE
TCE	TRICHLOROETHENE
TOL	TOLUENE
PCE	TETRACHLOROETHENE
CB	CHLOROBENZENE
M/P-X	META/PARA XYLENE
1,2-DCP	1,2-DICHLOROPROPANE
–	NOT DETECTED
J	ESTIMATED VALUE
/	CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS FOR NOVEMBER/DECEMBER SAMPLING ROUND IN MICROGRAMS PER LITER (ug/L)
TOB-DPW	TOWN OF OYSTER BAY-DEPARTMENT OF PUBLIC WORKS

GERAGHTY & MILLER, INC.
Environmental Services

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FIGURE 3-12

SY-8	
AMMONIA	0.21 / 0.13
ALKALINITY	59.8 / 62
CHLORIDE	32.3 / 32.7
HARDNESS	103 / 106
NITRATE	– / –
SULFATE	78.2 / 80.7
TDS	218 / 49

SY-4	
AMMONIA	33.8 / 30.5
ALKALINITY	446 / 449
CHLORIDE	152 / 155
HARDNESS	346 / 347
NITRATE	5.10 / 1.85
SULFATE	77.8 / 72
TDS	763 / 794

SY-3	
AMMONIA	67.8 / 123
ALKALINITY	716 / 727
CHLORIDE	136 / 176
HARDNESS	362 / 348
NITRATE	– / –
SULFATE	32.9 / 25.9
TDS	726 / 757

PK-10S	
AMMONIA	0.35 / 0.05
ALKALINITY	23.2 / 24.2
CHLORIDE	15.2 / 13.7
HARDNESS	68.8 / 67.8
NITRATE	7.33 / 8.04
SULFATE	39.9 / 51.4
TDS	162 / 181

SY-2R	
AMMONIA	– / 0.26
ALKALINITY	38.8 / 35
CHLORIDE	449 / 613
HARDNESS	135 / 121
NITRATE	2.42 / 2.41
SULFATE	56 / 58.4
TDS	861 / 850

RB-11S	
AMMONIA	– / 0.09
ALKALINITY	15.6 / 17.8
CHLORIDE	8.0 / 6.4
HARDNESS	17.4 / 19.2
NITRATE	4.42 / 2.15
SULFATE	– / –
TDS	47 / 31

SY-6	
AMMONIA	0.06 / 0.09
ALKALINITY	195 / 202
CHLORIDE	43 / 34.3
HARDNESS	176 / 181
NITRATE	2.57 / 2.26
SULFATE	10.3 / 19.8
TDS	287 / 323

SY-7	
AMMONIA	0.97 / 0.35
ALKALINITY	32.2J / 112
CHLORIDE	399 / 808
HARDNESS	260 / 282
NITRATE	0.31 / –
SULFATE	52.7 / 58.9
TDS	794 / 1,050

SY-9	
AMMONIA	0.76 / 0.61
ALKALINITY	190 / 131
CHLORIDE	39.3 / 47.2
HARDNESS	246 / 172
NITRATE	– / 0.07
SULFATE	68.3 / 4,530
TDS	346 / 312

SY-1	
AMMONIA	0.43 / 0.45
ALKALINITY	45.2 / 44.6
CHLORIDE	54.4 / 52.4
HARDNESS	67.2 / 59.6
NITRATE	– / 0.29
SULFATE	20.2 / 16.0
TDS	189 / 269

CERRO WIRE & CABLE COMPANY

CLARK SURGICAL CORP.

LONG ISLAND RAILROAD

ROBBINS LANE

LONG ISLAND EXPRESSWAY

MILLER PLACE

GORDON DRIVE

PRESTON LANE

INACTIVE SEWAGE TREATMENT PLANT

INACTIVE INCINERATOR

ANIMAL SHELTER

GALT SHEDS

SOUTH GROVE ANNEX

SOUTH GROVE ELEMENTARY SCHOOL

TOB-DPW

TOWN OF OYSTER BAY PARK

STOSSEL CIRCLE

ALDERWOOD LANE

MARSAK LANE

BELMONT CIRCLE

VIRGINIA ROAD

COLONY LANE

ABBY LANE

PARKFIELD CT. S.

SOUTHWOOD CIRCLE

SOUTH OYSTER BAY ROAD

CS-20, CS-22, CS-21, G-8, G-12, SY-8, B-2, SY-4, G-7, B-3, W-3, SY-3D, SY-3, G-6, G-13, SY-2R, SY-2D, G-14, SY-5, B-1, SY-6D, SY-6, B-4, W-4, SY-1D, SY-1, SY-7, SY-9, RW-12I, RW-12D, SY-3DD, PK-10I, PK-10D, PK-10S, RB-11D, RB-11I, RB-11S

EXPLANATION

PK-10I ⊕	OFF-SITE MONITORING WELL INSTALLED BY GERAGHTY & MILLER INC. FOR THE OU-2 REMEDIAL INVESTIGATION
SY-3 ◑	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF ERM NORTHEAST
SY-2R ●	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3D △	ON-SITE DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
B-3 W-4 □	ON-SITE LANDFILL DIMENSION STUDY SOIL BORING/SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3DD ◉	EXPLORATORY BORING/DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. FOR THE OU-2 REMEDIAL INVESTIGATION
G-13 ⊗	ON-SITE LANDFILL GAS MONITORING WELL
CS-20 ⊙	OFF-SITE GAS MONITORING WELL, INSTALLED BY GERAGHTY & MILLER, INC. DURING THE OU-2 REMEDIAL INVESTIGATION
*	DESTROYED MONITORING WELL
**	MONITORING WELL CAN NO LONGER BE SAMPLED DUE TO BEND IN WELL CASING
***	MONITORING WELL COULD NOT BE LOCATED
	SITE BOUNDARY (FENCE)
	RECHARGE BASIN
	LANDFILL AREA
TDS	TOTAL DISSOLVED SOLIDS
–	NOT DETECTED
J	ESTIMATED VALUE
/	CONCENTRATIONS FOR NOVEMBER/DECEMBER SAMPLING ROUND IN MICROGRAMS PER LITER (mg/L)
TOB-DPW	TOWN OF OYSTER BAY-DEPARTMENT OF PUBLIC WORKS

0 500 FT

GERAGHTY & MILLER, INC.
Environmental Services

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DRAFTED BY:	V. CARUNCHO	DATE:	3/10/94
CHECKED BY:	L. HENDRICKS	DATE:	–
APPROVED BY:	V. GLASSER	DATE:	–

CONCENTRATIONS OF LEACHATE INDICATOR PARAMETERS DETECTED IN SITE MONITORING WELLS SCREENED IN THE SHALLOW ZONE OF THE MAGOTHY AQUIFER
SECOND OPERABLE UNIT REMEDIAL INVESTIGATION
SYOSSET LANDFILL, SYOSSET, NEW YORK

FIGURE
3-13

PK-10I	
AMMONIA	39.1 / 37.9
ALKALINITY	404 / 419
CHLORIDE	291 / 678
HARDNESS	285 / 312
NITRATE	0.39 / 0.21
SULFATE	88.9 / 110
TDS	918 / 1,020

REP-2	
AMMONIA	39.3 / 41
ALKALINITY	400J / 419
CHLORIDE	287 / 499
HARDNESS	285 / 310
NITRATE	0.51 / 0.21
SULFATE	109 / 113
TDS	948 / 1,030

SY-3D	
AMMONIA	146 / 83.6
ALKALINITY	1,180 / 1,020
CHLORIDE	269 / 265
HARDNESS	470 / 468
NITRATE	0.22 / 0.46
SULFATE	27.2 / 22.6
TDS	1,240 / 1,400

RW-12I	
AMMONIA	16.2 / 14.9
ALKALINITY	167 / 162
CHLORIDE	106 / 118
HARDNESS	169 / 164
NITRATE	2.56 / 4.18
SULFATE	30.5 / 48.2
TDS	345 / 408

REP-3	
AMMONIA	17.6 / 13.4
ALKALINITY	446 / 162
CHLORIDE	106 / 117
HARDNESS	166 / 161
NITRATE	3.47 / 4.04
SULFATE	33.8 / 46.1
TDS	348 / 422

SY-2D	
AMMONIA	4.94 / 6.98
ALKALINITY	100 / 81.6
CHLORIDE	108 / 97
HARDNESS	68.4 / 58.4
NITRATE	1.2 / 1.39
SULFATE	22.6 / 16.5
TDS	282 / 299

SY-6D	
AMMONIA	0.29 / 0.27
ALKALINITY	19.8 / 9.80
CHLORIDE	77.9 / 87.4
HARDNESS	84 / 81
NITRATE	6.03 / 6.64
SULFATE	71.6 / 63
TDS	261 / 293

SY-1D	
AMMONIA	11.8 / 9.9
ALKALINITY	123 / 120
CHLORIDE	285 / 287
HARDNESS	222 / 224
NITRATE	6.21 / 6.19
SULFATE	146 / 150
TDS	798 / 803

RB-11I	
AMMONIA	– / –
ALKALINITY	14 / 11.6
CHLORIDE	29.7 / 27.9
HARDNESS	87.2 / 89.8
NITRATE	13.2 / 13.3
SULFATE	41.6 / –
TDS	186 / 252

REP-1	
AMMONIA	– / –
ALKALINITY	13.0 / 10.8
CHLORIDE	29.4 / 28.3
HARDNESS	86.6 / 89.4
NITRATE	12.9 / 13.4
SULFATE	42.4 / 34.2
TDS	179 / 216

CERRO WIRE & CABLE COMPANY

CLARK SURGICAL CORP.

LONG ISLAND RAILROAD

ROBBINS LANE

GORDON DRIVE

PRESTON LANE

INACTIVE SEWAGE TREATMENT PLANT

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BELMONT CIRCLE

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VIRGINIA ROAD

PARKFIELD CT. S.

SOUTHWOOD CIRCLE

SOUTH OYSTER BAY ROAD

EXPLANATION

PK-10I ⊕	OFF-SITE MONITORING WELL INSTALLED BY GERAGHTY & MILLER INC. FOR THE OU-2 REMEDIAL INVESTIGATION
SY-3 ◑	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF ERM NORTHEAST
SY-2R ●	ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3D △	ON-SITE DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
B-3 W-4 □	ON-SITE LANDFILL DIMENSION STUDY SOIL BORING/SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
SY-3DD ◒	EXPLORATORY BORING/DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. FOR THE OU-2 REMEDIAL INVESTIGATION
G-13 ⊛	ON-SITE LANDFILL GAS MONITORING WELL
CS-20 ⊙	OFF-SITE GAS MONITORING WELL, INSTALLED BY GERAGHTY & MILLER, INC. DURING THE OU-2 REMEDIAL INVESTIGATION
*	DESTROYED MONITORING WELL
**	MONITORING WELL CAN NO LONGER BE SAMPLED DUE TO BEND IN WELL CASING
***	MONITORING WELL COULD NOT BE LOCATED
	SITE BOUNDARY (FENCE)
	RECHARGE BASIN
	LANDFILL AREA
TDS	TOTAL DISSOLVED SOLIDS
–	NOT DETECTED
J	ESTIMATED VALUE
/	CONCENTRATIONS FOR NOVEMBER/DECEMBER SAMPLING ROUND IN MICROGRAMS PER LITER mg/L
TOB-DPW	TOWN OF OYSTER BAY-DEPARTMENT OF PUBLIC WORKS

0 500 FT

GERAGHTY & MILLER, INC.
Environmental Services

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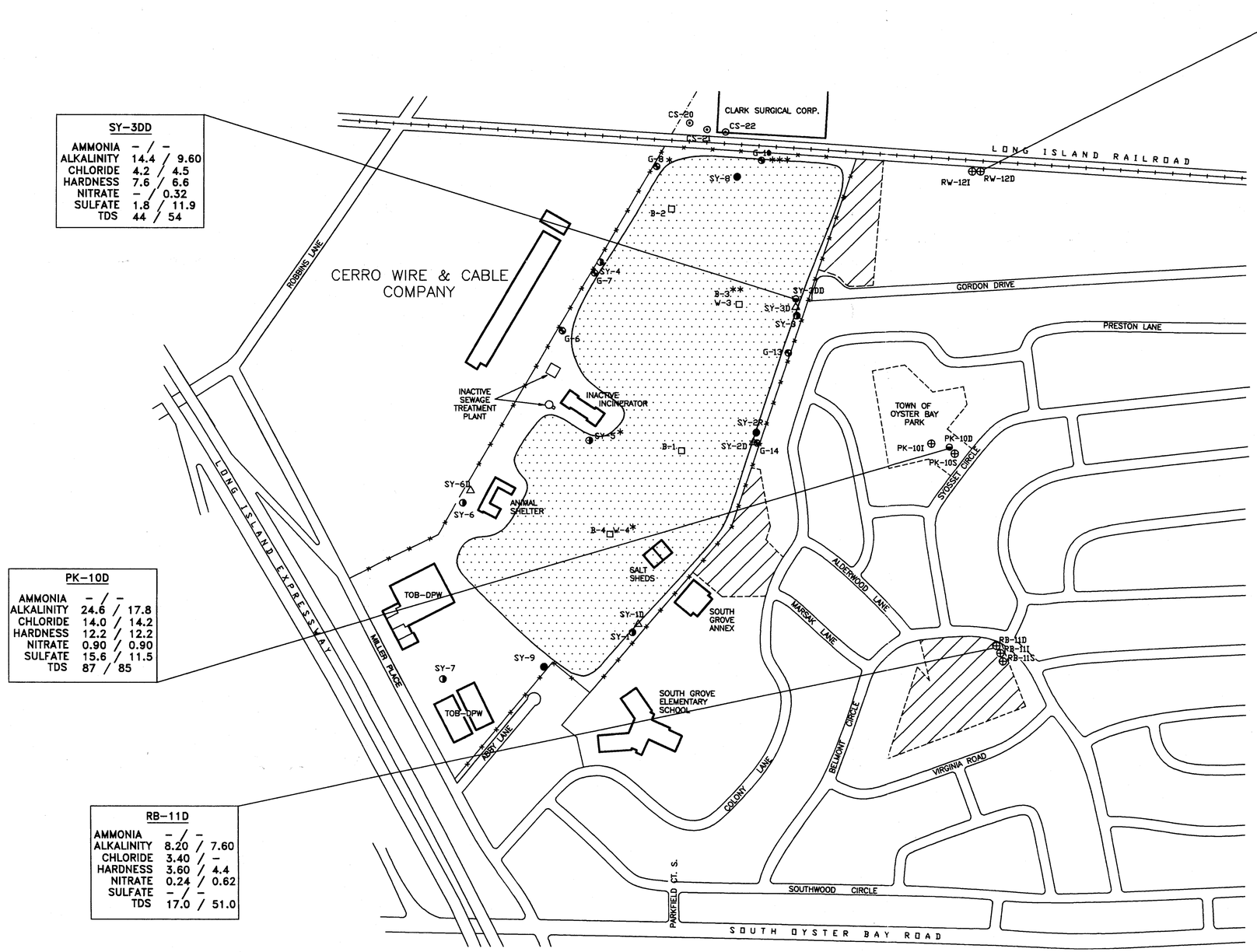
CONCENTRATIONS OF LEACHATE INDICATOR PARAMETERS DETECTED IN SITE MONITORING WELLS SCREENED IN THE INTERMEDIATE ZONE OF THE MAGOTHY AQUIFER SECOND OPERABLE UNIT REMEDIAL INVESTIGATION SYOSSET LANDFILL, SYOSSET, NEW YORK

FIGURE 3-14



SY-3DD

AMMONIA	– / –
ALKALINITY	14.4 / 9.60
CHLORIDE	4.2 / 4.5
HARDNESS	7.6 / 6.6
NITRATE	– / 0.32
SULFATE	1.8 / 11.9
TDS	44 / 54

RW-12D

AMMONIA	– / 0.11
ALKALINITY	73.8 / 80.4
CHLORIDE	122 / 139
HARDNESS	132 / 144
NITRATE	1.09 / 0.10
SULFATE	31.7 / 54.3
TDS	320 / 511

PK-10D

AMMONIA	– / –
ALKALINITY	24.6 / 17.8
CHLORIDE	14.0 / 14.2
HARDNESS	12.2 / 12.2
NITRATE	0.90 / 0.90
SULFATE	15.6 / 11.5
TDS	87 / 85

RB-11D

AMMONIA	– / –
ALKALINITY	8.20 / 7.60
CHLORIDE	3.40 / –
HARDNESS	3.60 / 4.4
NITRATE	0.24 / 0.62
SULFATE	– / –
TDS	17.0 / 51.0

EXPLANATION

- PK-10I ⊕ — OFF-SITE MONITORING WELL INSTALLED BY GERAGHTY & MILLER INC. FOR THE OU-2 REMEDIAL INVESTIGATION
- SY-3 ◑ — ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF ERM NORTHEAST
- SY-2R ● — ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
- SY-3D △ — ON-SITE DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
- B-3 / W-4 □ — ON-SITE LANDFILL DIMENSION STUDY SOIL BORING/SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
- SY-3DD ◒ — EXPLORATORY BORING/DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. FOR THE OU-2 REMEDIAL INVESTIGATION
- G-13 ⊗ — ON-SITE LANDFILL GAS MONITORING WELL
- CS-20 ⊙ — OFF-SITE GAS MONITORING WELL, INSTALLED BY GERAGHTY & MILLER, INC. DURING THE OU-2 REMEDIAL INVESTIGATION
- * — DESTROYED MONITORING WELL
- ** — MONITORING WELL CAN NO LONGER BE SAMPLED DUE TO BEND IN WELL CASING
- *** — MONITORING WELL COULD NOT BE LOCATED
- SITE BOUNDARY (FENCE)
- RECHARGE BASIN
- LANDFILL AREA
- TDS — TOTAL DISSOLVED SOLIDS
- – — NOT DETECTED
- / — CONCENTRATIONS FOR NOVEMBER/DECEMBER SAMPLING ROUND IN MICROGRAMS PER LITER (mg/L)
- TOB-DPW — TOWN OF OYSTER BAY-DEPARTMENT OF PUBLIC WORKS

0 500 FT

GERAGHTY & MILLER, INC.
Environmental Services

SCALE VERIFICATION
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:
USE TO VERIFY FIGURE REPRODUCTION SCALE

REV. NO.	DATE	DESCRIPTION	BY	APPR.

PROJECT NO.:	NY029008	FILE NO:	1584
DRAWING:	LEACH-3	PLOT SIZE:	1"=250'
DRAFTED BY:	V. CARUNCHO	DATE:	3/10/94
CHECKED BY:	L. HENDRICKS	DATE:	–
APPROVED BY:	V. GLASSER	DATE:	–

CONCENTRATIONS OF LEACHATE INDICATOR PARAMETERS DETECTED IN SITE MONITORING WELLS SCREENED IN THE DEEP ZONE OF THE MAGOTHY AQUIFER
SECOND OPERABLE UNIT REMEDIAL INVESTIGATION
SYOSSET LANDFILL, SYOSSET, NEW YORK

FIGURE
3-15

APPENDIX A

JANUARY 20, 1993 LETTER TO LOCKWOOD, KESSLER & BARTLETT, INC. REGARDING PROPOSED SCREEN SETTINGS

GERAGHTY
& MILLER, INC.
Environmental Services

Ground Water *Hydrocarbon* *Remediation* *Education*

January 20, 1993

John P. Lekstutis, P.E.
Lockwood, Kessler & Bartlett
1 Aerial Way
Syosset, New York 11797

Subject: Syosset Landfill - Second Operable Unit Remedial Investigation

Dear Mr. Lekstutis:

Geraghty & Miller, Inc., is writing to propose screen settings for the remaining nine ground-water monitoring wells that will be installed for the subject investigation. The screen settings proposed in this letter were selected in accordance with the Work Plan for this investigation. As you know, the two exploratory borings (SY-3DD [on-site] and PK-10D [off-site]) were recently completed. Ground-water samples were collected at 20 foot intervals from both well borings and were analyzed for leachate indicator parameters (see attached tables). These data were used in conjunction with the lithologic profiles (from geophysical logging [natural gamma] and formation samples) to determine the respective screen settings for the wells that were installed in these two borings. The screen for Well SY-3DD was set at 530 to 540 feet below land surface and the screen for Well PK-10D was set at 489 to 499 feet below land surface. Based on the geologic logs and geophysical logs from both well borings, there are four low-permeability layers that were encountered at both boring locations which we interpret as being continuous. Assuming that the land surface elevations at both well locations are the same, which the topographic map indicates, the lithologic layers slope upward in a northerly direction. This is consistent with the regional hydrogeologic setting in which the bedrock surface and the overlying unconsolidated geologic units slope upward in a northerly direction. It is our opinion that this hydrogeologic setting explains why the bottom of the plume is situated at a higher elevation off-site than on-site even though there is a strong downward vertical hydraulic gradient.

Because of this situation, we recommend that the screens for the deep wells at the other two off-site locations be set at the same depth as off-site Well PK-10D (approximately 490 to 500 feet below land surface). The intermediate depth wells (off-site) should be set at a depth of about 360 feet because it was at this depth that the highest concentrations of leachate parameters were detected in Well Boring PK-10D. Because the highest concentrations of leachate parameters in the on-site Well Boring SY-3DD were detected at 218 feet below land surface, Geraghty & Miller recommends that existing Well SY-6D, which

is screened at a similar depth (195 to 205 feet below land surface), serve as the deep upgradient monitoring well. In this way, upgradient and downgradient water-quality data can be optimally compared. As described in the Work Plan, the shallow wells should be set at a depth of about 150 feet because this is the depth between the first sampling depth where ground water was defined as leachate in Well Boring PK-10D (160 feet) and the sampling depth just above that definition.

The drilling of the intermediate-depth well boring at the Town Park (PK-10I) is scheduled to begin next week. The final screen settings for the remaining eight wells should be determined in consultation with the United States Environmental Protection Agency (USEPA) based on the lithologic profiles from the deep wells at each drilling site. Geraghty & Miller recommends that we meet with the USEPA to discuss the screen settings proposed in this letter and to review the overall project objectives given the new information developed.

Please call us if you have any questions.

Sincerely,

GERAGHTY & MILLER, INC.

Vincent J. Glasser
Senior Scientist/Project Manager

Michael F. Wolfert
Vice President/Project Director

cc: R.W. Lenz, P.E.

VJG/MFW:bjm
NY029-04lets120.let

Table 1. Summary of Field Measurements of Leachate Parameters of Ground-Water Samples Collected During Drilling of Exploratory Boring PK-10, Syosset Landfill, Syosset, New York.

		Primary Leachate Parameters			Secondary Leachate Parameters			
Sample Depth (feet)	Date Sampled Action Level (a)	Alkalinity mg/L 11	Total Hardness mg/L 43	Ammonia mg/L 0.12	Conductivity (umhos/cm) 217	pH 5.75	Chloride mg/L 19	Temperature (Celcius) 14.5
PK-10D								
120	12/15/92	(b)	(b)	(b)	(b)	(b)	(b)	(b)
140	12/15/92	5.5	59	<0.06	240	7.45	14	15
160	12/15/92	13	59	<0.06	240	7.25	17	15
180	12/15/92	37	39	<0.06	180	7.15	14	15
200	12/15/92	39	92	<0.06	340	5.25	18	15
220	12/15/92	(b)	(b)	(b)	(b)	(b)	(b)	(b)
240	12/15/92	44	78	<0.06	400	5.45	42	15
260	12/16/92	(c)	(c)	(c)	(c)	(c)	(c)	15
280	12/16/92	37	93	0.17	500	7.55	47	15
280(e)	12/16/92	33.7	92.2	0.65	NA	NA	46.8	NA
300	12/16/92	18	63	0.08	300	7.10	26	15
300 (d)	12/16/92	16	58	0.07	290	7.15	23	15
300(e)	12/16/92	15	58.6	0.10	NA	NA	23.3	NA
320	12/16/92	66	47	6.2	750	7.65	68	15
340	12/16/92	250	220	19	1,670	7.45	(e)	15
360	12/17/92	370	310	24	2,000	7.55	360	15
380	12/18/92	220	278	19	2,100	7.90	439	15
400	12/18/92	150	210	9.9	1,600	7.70	350	15
420	12/21/92	46	120	8.6	720	7.15	140	15
440	12/21/92	6.6	75	<0.06	400	6.25	76	15

Table 1. Summary of Field Measurements of Leachate Parameters of Ground-Water Samples Collected During Drilling of Exploratory Boring PK-10, Syosset Landfill, Syosset, New York.

Sample Depth (feet)	Date Sampled	Primary Leachate Parameters: Alkalinity mg/L	Total Hardness mg/L	Ammonia mg/L	Secondary Leachate Parameters: Conductivity (umhos/cm)	pH	Chloride mg/L	Temperature (Celcius)
	Action Level (a)	11	43	0.12	217	5.75	19	14.5
PK-10D								
460	12/22/92	6.8	160	0.08	920	7.10	160	15
479	12/28/92	6.1	7.6	0.07	50.6	6.80	11.2	15
479(e)	12/28/92	<1.0	62.2	0.09	NA	NA	7.53	NA
499	12/28/92	9.1	16	0.07	74	7.0	13	15
499(e)	12/28/92	9.9	12.8	0.51	NA	NA	14.5	NA
Hydrant Water	12/17/92	31	13	<0.06	160	8.20	8.7	15

(a) Based on statistical analysis of background water-quality data.
(b) Sample could not be collected due to the presence of a dry clay layer at the sampling depth.
(c) Sample was collected but almost all of it was particulate matter (clay partcles).
(d) Field Replicate.
(e) Replicate sample analyzed by IEA, Inc., Monroe, Connecticut.
(f) Not enough sample collected for analyses.

mg/L Milligrams per liter.
umhos/cm Micromhos per centimeter.

Table 3. Summary of Field Measurements of Leachate Parameters of Ground-Water Samples Collected During Drilling of Exploratory Boring SY-3DD, Syosset Landfill, Syosset, New York.

		Primary Leachate Parameters			Secondary Leachate Parameters			
Sample Depth (feet)	Date Sampled Action Level (a)	Alkalinity mg/L 11	Total Hardness mg/L 43	Ammonia mg/L 0.12	Conductivity (umhos/cm) 217	pH 5.75	Chloride mg/L 19	Temperature (Celcius) 14.5
Well SY-3DD								
118	11/5/92	(c)	39	23	280	5.05	28	15
137	11/5/92	190	140	21	640	6.35	36	15
158	11/6/92	390	170	71	960	6.35	54	15
179	11/6/92	840	380	160	1,600	6.95	120	15
192	11/6/92	630	280	120	1,200	7.35	26	15
218	11/6/92	910	300	420	2,000	7.85	22	15
239	11/9/92	890	400	150	2,400	7.35	100	15
256	11/9/92	540	330	200	1,900	7.05	180	15
279	11/9/92	440	310	180	1,900	7.10	240	15
299	11/9/92	500	280	160	1,700	6.10	270	15
318	11/10/92	430	270	220	2,300	6.55	490	15
335	11/17/92	360	200	(b)	2,200	7.87	390	15
355	11/17/92	31	220	(b)	1,200	7.90	190	15
355 (d)	11/17/92	31.7	211	11.4	NA	NA	200	NA
375	11/17/92	38	(c)	(b)	1,600	4.80	(c)	15
375 (d)	11/17/92	41.6	231	19.1	NA	NA	271	NA
395	11/17/92	70	210	(b)	1,200	7.20	230	15
395 (d)	11/17/92	76.4	174	21.0	NA	NA	222	NA

See page 2 for footnotes.

Table 3. Summary of Field Measurements of Leachate Parameters of Ground-Water Samples Collected During Drilling of Exploratory Boring SY-3DD, Syosset Landfill, Syosset, New York.

Sample Depth (feet)	Date Sampled Action Level (a)	Primary Leachate Parameters: Alkalinity mg/L 11	Total Hardness mg/L 43	Ammonia mg/L 0.12	Secondary Leachate Parameters: Conductivity (umhos/cm) 217	pH 5.75	Chloride mg/L 19	Temperature (Celcius) 14.5
Well SY-3DD (Cont.)								
417	11/18/92	48	250	5.0	1,500	7.80	270	15
437	11/18/92	52	240	4.0	1,200	7.70	220	15
457	11/18/92	80	240	2.4	1,100	7.70	180	15
480	11/25/92	66	180	2.6	920	7.70	150	15
500	11/30/92	15	23	0.41	56	7.40	15	15
520	12/1/92	9.7	9.0	0.29	58	7.20	4.9	15
520 (e)	12/1/92	12	6.9	<0.05	NA	NA	6	NA
520**	12/1/92	10	8.1	0.16	57	7.20	4.8	15
540	12/1/92	13	12	<0.06	52	6.80	5.2	15
Hydrant Water	11/6/92	39	47	30	200	4.90	16	15
Hydrant Water	12/1/92	45	33	0.14	180	8.70	15	15

mg/L Milligrams per liter.
umhos/cm Micromhos per centimeter.
(a) Based on statistical analysis of background water-quality data.
(b) Probe malfunction.
(c) Not enough sample collected for all analyses.
(d) Replicate sample analyzed by IEA, Inc., Monroe, Connecticut.
(e) Replicate sample analyzed by EcoTest Laboratories, Inc., North Babylon, New York.
** Field replicate.
NA Not analyzed.

APPENDIX B

MARCH 11, 1993 LETTER TO LOCKWOOD, KESSLER & BARTLETT, INC. REGARDING COLLAPSE OF WELL BORING PK-101

GERAGHTY
& MILLER, INC.
Environmental Services

Ground Water *Hydrocarbon* *Remediation* *Education*

March 11, 1993

VIA TELECOPIER

John P. Lekstutis, P.E.
Lockwood, Kessler, & Bartlett, Inc.
1 Aerial Way
Syosset, New York 11791

Subject: Second Operable Unit Remedial Investigation, Syosset Landfill, Syosset, New York

Dear John:

Geraghty & Miller, Inc. has prepared this letter to provide Lockwood, Kessler, & Bartlett, Inc. (LKB) with recommendations to resolve problems encountered during the drilling of Well Boring PK-10I. As you are aware, the rapid loss of circulation of drilling mud at the 328-foot depth on Friday, February 26, 1992, led to the collapse of Well Boring PK-10I up to several feet below the bottom of the 10-inch diameter surface casing (approximately 138 feet below land surface). This loss of drilling mud is probably due to loose, unstable formation material created during the drilling of Well PK-10D, which is located about 12 feet away from Well Boring PK-10I. The formation instability was likely caused by the removal of sand heave inside the drill casings during drilling of PK-10D which resulted in more material being removed from the boring than the collective volume of the casings installed. This condition precludes completion of the intermediate depth well (PK-10I) at this location.

In order to expedite continuation and completion of the well installation program, Geraghty & Miller recommends that the shallow well, PK-10S, be installed in the collapsed PK-10I well boring. This shallow well will only have to be drilled an additional 12 feet below the existing (open) 10-inch diameter steel casing which is set at a depth of 138 feet. PK-10S is proposed to be installed in the following manner: the 4-inch diameter well should be set in a 6-inch diameter steel casing, which will be lowered inside the 10-inch diameter surface casing and driven to the completion depth (150 feet) using a cable tool rig. The well will be gravel-packed by adding the gravel in the annulus between the well casing and 6-inch diameter casing as the 6-inch diameter casing is pulled back. The gravel pack will extend to land surface inside the 10-inch diameter casing to allow for potential settling. To prevent the well from settling in the boring with the gravel pack, it will be centered and secured to the 10-inch diameter casing at land surface. A large well seal will be fabricated by Delta Well & Pump Company, Inc. (Delta) which will be slightly recessed inside the 10-inch diameter surface casing. A 2-inch diameter pipe nipple with a screw-on cap will be set in the well seal to allow for measuring the depth to the gravel pack and for adding additional gravel, as needed. After the gravel level has stabilized, a permanent bentonite seal will be emplaced above the gravel pack and extending to land surface. The well head will be completed by welding a flush mount. bolt-down manhole cover directly to the 10-inch diameter surface casing.

Delta proposes drilling a replacement PK-10I well boring at a new location about 100 feet south of the original location. Geraghty & Miller believes that the disturbed formation from the drilling of PK-10D is unlikely to be encountered at this distance, however, this cannot be known with certainty until this new boring is actually drilled. This well boring and well will be drilled and installed according to the Site Operations Plan (SOP) except for the surface casing. Delta's subcontractor, Catoh, Inc., who installed the two exploratory borings and the surface casings for the planned modified mud rotary borings, is no longer at the site (they demobilized in December 1992). Delta has therefore proposed installing the 10-inch diameter surface casing for Well PK-10I using a combination of the hollow-stem auger (auger) and cable tool drilling methods. The auger rig will use large diameter (12-inch inside diameter) auger flytes to drill to the maximum depth possible (approximately 50 to 60 feet), and the cable tool rig will be used to install the 10-inch diameter casing inside the augers and drive this casing to about 130 feet below land surface. Geraghty & Miller finds this method to be acceptable and recommends its use. The installation of the surface casing is expected to take about 3 or 4 days. The well boring will then be completed in the prescribed manner using the modified mud-rotary drilling method.

As part of their effort to expedite the drilling program, Delta plans on subcontracting another firm (United Well and Pump Corporation, Bohemia, New York) to do the cable tool work. The driller from this firm has not completed the 40-hour Occupational Safety and Health Administration (OSHA) training course, however, because the work will be undertaken in uncontaminated soil, Geraghty & Miller believes that the requirement for this training is not applicable to this specific activity. As such, Geraghty & Miller recommends that the U.S. Environmental Protection Agency (USEPA) be asked to waive the OSHA training requirements for this activity.

Please call us if you have any questions.

Sincerely,

GERAGHTY & MILLER, INC.

Vincent J. Glasser
Senior Scientist/Project Manager

Michael F. Wolfert
Vice President/Project Director

cc: R.W. Lenz, P.E.

VJG/MFW:bjm

NY029-04leka311.let

APPENDIX C

SAMPLE/CORE LOGS

GERAGHTY & MILLER, INC.

SAMPLE/CORE LOG

BORING/WELL: SY3DD PROJECT NO: NY02908 PAGE: 1 of 5

SITE LOCATION: Syosset Landfill - near Gordon Drive DRILLING STARTED: 11/03/92 DRILLING COMPLETED: 12/01/92

TOTAL DEPTH DRILLED: 540 HOLE DIAMETER: 16/10/8/6 in. TYPE OF SAMPLE/ CORING DEVICE: Cyclone

LENGTH & DIAMETER OF CORING DEVICE: -- SAMPLING INTERVAL: Continuous out of Cyclone

LAND-SURFACE ELEVATION: { } SURVEYED { } ESTIMATED DATUM:

DRILLING FLUID USED: Water DRILLING METHOD: Barber (air rotary)

DRILLING CONTRACTOR: Catoh DRILLER: J. McAdden HELPER: M. Jackowski

PREPARED BY: Sarah Zagaja HAMMER WEIGHT: -- HAMMER DROP: --

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION
FROM	TO			
0	3	--	--	Top soil.
3	8			Sand, medium to coarse, and gravel, fine, some medium,
				brown, dry.
8	14			Sand, medium, some coarse, trace gravel, fine, brown,
				dry.
14	18			Sand, medium, some coarse, and gravel, fine, some
				coarse, brown, dry.
18	28			Sand, medium to coarse, some gravel, fine, trace
				medium, brown, dry.
28	34			Sand, medium to coarse, some gravel, fine, trace
				medium, brown, dry.
34	37			Sand, medium, some coarse, trace gravel, fine, brown,
				dry.
37	42			Sand, medium, some coarse, trace gravel, fine, brown,
				dry.
42	49			Sand, medium, some fine, some coarse, trace gravel,
				fine, brown, dry.
49	57			Sand, medium, trace fine, some coarse, some gravel,
				fine, brown, dry.
57	68			Sand, medium, some fine, trace coarse, brown,
				dry.
68	74			Sand, medium, some fine, trace coarse, trace gravel,
				fine, brown, dry.

GERAGHTY & MILLER, INC.

SAMPLE/CORE LOG (Cont.d)

BORING/WELL: SY3DD PREPARED BY: S. Zagaja PAGE: 2 of 5

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION
FROM	TO			
74	77	--	--	Sand, medium, some fine, some coarse, some gravel,
				fine, brown, dry.
77	85			Sand, medium to coarse, trace fine, trace gravel, fine,
				brown, dry.
85	97			Sand, medium to coarse, and gravel, fine to medium,
				brown, dry.
97	110			Gravel, fine to medium, some coarse, and sand, medium
				to coarse, brown.
110	114			Sand, medium to coarse, trace fine, some gravel, fine
				to medium, brown.
114	117			Sand, fine to medium, some coarse, trace fine gravel,
				light brown/grey.
118	125			Sand, fine to medium, some coarse, trace fine gravel,
				light brown/grey.
125	137			Sand, fine, micaceous, some silt, some clay,
				grey.
137	147			Sand, fine, some medium, trace clay, micaceous,
				grey.
147	158			Sand, fine to medium, trace clay, brown.
158	170			Sand, fine to medium, trace clay, brown.
170	179			Sand, fine to medium, trace clay, brown.
179	188			Sand, fine, some medium, micaceous, orange/
				brown.
188	197			Sand, fine, trace medium, trace silt, micaceous,
				trace clay, orange/brown, some iron pyrite
				concretions are present.
197	212			Sand, fine, trace medium, some silt, trace clay,
				micaceous, orange/brown.
212	218			Sand, fine to medium, trace silt, micaceous,
				orange/brown.
218	232			Sand, fine to medium, trace silt,
				micaceous, orange/brown, some iron
				concretions.

GERAGHTY & MILLER, INC.

SAMPLE/CORE LOG (Cont.d)

BORING/WELL: SY3DD PREPARED BY: S. Zagaja PAGE: 3 of 5

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION
FROM	TO			
232	239	--	--	Sand, fine, trace medium, trace silt, some clay,
				micaceous. Sand is orange/brown. Clay is light
				grey. Probably in stringers.
239	256			Sand, fine, trace medium, trace silt, trace clay,
239	256			some iron concentrations, orange/brown.
256	261			Sand, fine, trace medium, some silt, trace clay,
				some iron concentrations, orange/brown.
261	278			Sand, fine, trace silt, some clay-in lenses, sand is
				brown/orange, clay and silt are brown/grey. There
				was a substantial clay layer at approximately
				261 feet.
278	282			Sand, fine, some silt, trace clay, brown/grey.
282	283			Clay, grey, trace silt.
283	299			Sand, fine, some silt, some clay, in lenses, grey,
				micaceous.
299	316			Sand, fine, some medium, and silt, some clay, brown/
				grey.
316	318			Sand, fine to medium, greyish brown, with iron
				concretions.
318	325			Sand, fine to medium, greyish brown, with iron
				concretions.
325	332			Sand, fine, some silt, grey.
332	335			Sand, fine, and silt, brownish/grey
335	344			Sand, fine, and silt, light grey.
344	348			Sand, fine, some silt, brownish grey, some iron
				concretions.
348	355			Sand, fine, some silt, trace clay, brownish grey.
355	365			Sand, fine, some silt, some clay, brownish grey,
				micaceous.
365	375			Sand, fine, some medium, some silt, trace clay, light
				grey, micaceous.
375	380			Sand, fine, some medium, some silt, trace clay, light
				grey, micaceous.

GERAGHTY & MILLER, INC.

SAMPLE/CORE LOG (Cont.d)

BORING/WELL: SY3DD PREPARED BY: S. Zagaja PAGE: 4 of 5

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION
FROM	TO			
380	385	--	--	Sand, fine, some medium, some silt, trace clay, light grey, micaceous, orange.
385	395			Sand, fine to medium, trace coarse, trace silt, trace clay, with iron concretions, orange/red, micaceous.
395	410			Sand, fine to medium, trace coarce, trace silt, trace clay, orange/red, micaceous, iron concretions.
410	417			Sand, fine, trace medium, some silt, orangeish brown, micaceous.
417	427			Sand, fine, trace medium, some silt, orangeish brown, micaceous.
427	430			Sand, fine, some medium, trace silt, micaceous, orangeish brown, with iron concretions.
430	437			Sand, fine, some medium, some silt, trace clay, brown, getting greyer with depth, micaceous, some iron concretions.
437	457			Sand, fine, trace medium, some silt, trace clay, grey-grading into brown with depth, micaceous.
457	462			Sand, fine, trace medium, trace coarse, some silt, brown, micaceous.
462	470			Sand, fine, trace medium, trace silt, light brown, micaceous.
470	480			Sand, fine, some medium, trace silt, light brown, micaceous.
480	485			Sand, fine, some medium, trace silt, dark grey with iron concretions.
485	488			Sand, fine, some medium, trace silt, light grey with iron concretions.
488	493			Clay and sand, fine, some silt, clay is in competent laminations, light grey.
493	500			Sand, fine, some silt, some clay in laminations, light grey to brown, some iron concretions.
500	503			Sand, fine, some silt, some clay in laminations, light grey to brown, some iron concretions.

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SAMPLE/CORE LOG (Cont.d)

BORING/WELL: SY3DD PREPARED BY: S. Zagaja PAGE: 5 of 5

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION
FROM	TO			
503	509	--	--	Sand, fine, some silt, light brown.
509	510			Clay, light grey to brown, some sand, fine.
510	513			Sand, medium to coarse, some fine, trace fine gravel,
				light brown, micaceous, quartz rich.
513	520			Sand, fine to medium, trace coarse, trace silt, light
				brown, quartz rich.
520	530			Sand, medium to coarse, some fine, trace fine gravel,
				light brown, micaceous, quartz rich.
530	540			Sand, medium to coarse, some fine, trace fine gravel,
				light brown to grey.

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SAMPLE/CORE LOG

Syosset Landfill

BORING/WELL: PK-10D PROJECT NO: NY02908 PAGE: 1 of 5

SITE LOCATION: Park on Syosset Circle DRILLING STARTED: 10/28/92 DRILLING COMPLETED: 12/30/92

TOTAL DEPTH DRILLED: 500 ft. HOLE DIAMETER: 16/10/8 in. TYPE OF SAMPLE/ CORING DEVICE: Cyclone

LENGTH & DIAMETER OF CORING DEVICE: -- SAMPLING INTERVAL: Continuous out of Cyclone

LAND-SURFACE ELEVATION: ( ) SURVEYED ( ) ESTIMATED DATUM:

DRILLING FLUID USED: Water DRILLING METHOD: Barber (air rotary)

DRILLING CONTRACTOR: Catoh DRILLER: J. McAdden HELPER: M. Jackowski

PREPARED BY: Sarah Zagaja HAMMER WEIGHT: -- HAMMER DROP: --

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION
FROM	TO			
0	5	--	--	Top soil, sand and gravel, brown.
5	10			Sand, medium to coarse, some gravel, fine to medium,
				trace coarse, light brown, dry.
10	16			Gravel, fine to coarse, and sand, medium to coarse,
				light brown, dry.
16	26			Sand, medium to coarse, trace gravel, fine, light
				brown, dry.
26	37			Sand, medium to coarse, some gravel, fine to medium,
				light brown, dry.
37	44			Sand, medium to coarse, some gravel, fine to medium,
				light brown, dry.
44	54			Sand, medium to coarse, trace gravel, fine to medium,
				light brown, dry.
54	58			Sand, medium to coarse, and gravel, fine to medium,
				some coarse, light brown, dry.
58	68			Sand, medium to coarse, and gravel, fine to medium,
				some coarse, light brown, dry.
68	76			Sand, medium to coarse, some gravel, fine to medium,
				trace coarse, light brown, dry.
76	96			Sand, medium to coarse, some fine gravel, trace
				medium, light brown, dry.
96	105			Sand, medium to coarse, and gravel, fine, some medium,
				brown, dry.

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SAMPLE/CORE LOG (Cont.d)

BORING/WELL: PK-10 PREPARED BY: S. Zagaja PAGE: 2 of 5

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION
FROM	TO			
105	114	--	--	Sand, coarse, some medium, and gravel, fine to
				medium, brown, dry.
114	117			Gravel, fine to medium, some coarse, trace fine
				cobbles, some sand, medium to coarse, brown,
				dry.
117	119			Sand, fine to medium, some silt, trace clay, brown/
				grey, moist.
119	133			Clay and sand, fine, some silt, slightly moist, light
				grey.
133	137.5			Sand, fine, some clay, some silt, some fine gravel,
				slightly moist, light grey.
137.5	140			Sand, fine, and clay, some silt, clay layers are
				light grey, sand and silt is light brown. Clay is
				micaceous.
140	146			Sand, fine to medium, some silt, trace clay, trace
				gravel, light brown to rusty brown.
146	152			Sand, fine to medium, some silt, trace gravel, fine
				to medium brown.
152	160			Sand, fine to medium, micaceous, brown.
160	165			Sand, fine to medium, micaceous, brown.
165	172			Sand, fine to medium, some silt, brown, micaceous.
172	175			Sand, fine to medium, some silt, brown, micaceous.
175	180			Sand, fine, some medium, trace silt, brown, micaceous.
180	190			Sand, fine, some medium, trace silt, brown, micaceous,
				with some iron concretions.
190	197			Sand, fine to medium, trace silt, brown, micaceous,
				with iron concretions.
197	200			Sand, fine, trace medium, some silt, some clay-in
				layers, light brown to light grey, micaceous, iron
				concretions.
200	206			Sand, fine, trace medium, some silt, some clay, sand
				is light brown, clay is grey, iron concretions
				abundent.

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SAMPLE/CORE LOG (Cont.d)

BORING/WELL: PK-10 PREPARED BY: S. Zagaja PAGE: 3 of 5

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION
FROM	TO			
206	211	--	--	Sand, fine, some silt, trace clay, with concretions.
211	220			Clay, some silt, trace fine sand, sand and silt is
				light brown, clay is light grey to dark grey. Iron
				concretions abundent.
220	228			Silt, some clay, trace fine sand, light brown to
				light grey, micaceous, few iron concretions.
228	233			Silt, some clay, trace fine sand, light brown to light
				grey, micaceous, few iron concretions.
233	240			Sand, fine, and silt, trace clay, light brown,
				micaceous, abundent iron concretions.
240	243			Sand, fine, and silt, trace clay, light brown,
				micaceous, abundent iron concentrations.
243	254			Sand, fine, some medium, some silt, light brown.
254	257			Sand, fine, and clay, trace silt, rusty brown,
				iron concretions.
257	260			Clay, trace sand, fine, trace silt, light brown to
				grey, micaceous.
260	263			Clay, trace sand, fine, trace silt, light brown to
				grey, micaceous.
263	272			Sand, fine, and silt, rusty brown, iron concretions.
272	280			Sand, fine to medium, some silt, brown to rusty brown,
				some iron concretions.
280	285			Sand, fine to medium, trace silt, brown to rusty brown.
285	295			Sand, fine, some medium, some silt, brown.
295	300			Sand, medium, some fine, trace silt, light brown.
300	315			Sand, medium, some fine, trace silt, light brown.
315	320			Sand, fine, some medium, some silt, trace clay, light
				brown to grey, some iron concretions.
320	326			Sand, fine, some medium, some silt, trace clay, light
				brown to grey, some iron concretions.
326	332			Sand, fine, trace medium, and silt, trace clay, light
				grey, micaceous.
332	336			Sand, fine to medium, some silt, light grey/brown,
				micaceous.

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SAMPLE/CORE LOG (Cont.d)

BORING/WELL: PK-10 PREPARED BY: S. Zagaja PAGE: 4 of 5

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION
FROM	TO			
336	340	--	--	Sand, fine, trace medium, some silt, trace clay,
				light grey, micaceous.
340	345			Sand, fine, and silt, light brownish/grey.
345	354			Sand, fine, some medium, some silt, light brown turning
				greyer with depth.
354	360			Sand, fine, some medium, some silt, grey.
360	370			Sand, fine, some medium, some silt, grey.
370	376			Sand, fine to medium, trace coarse, trace silt, light
				grey, some iron concretions.
376	380			Sand, medium, some fine, some coarse, trace silt, light
				grey/brown.
380	385			Sand, medium, some fine, some coarse, trace silt,
				light grey/brown.
385	392			Sand, medium, some fine, some coarse, trace silt,
				brown, micaceous.
392	394			Sand, medium, some fine, trace coarse, trace silt,
				brown, micaceous, grading to brownish red.
394	400			Sand, medium, trace fine, rusty brown, micaceous, some
				iron concretions.
400	405			Sand, medium, trace coarse, trace fine, brown,
				micaceous.
405	416			Sand, medium, trace coarse, trace fine, brown to dark
				brown.
416	420			Sand, fine, trace medium, some silt, light brown to
				grey, micaceous.
420	428			Sand, fine, trace medium, some silt, light brown to
				grey, micaceous.
428	440			Sand, fine, and silt, trace clay, micaceous, light grey.
440	444			Sand, fine, and silt, trace clay, micaceous, light grey.
444	452			Sand, medium, some fine, trace coarse, light brown,
				micaceous, iron concretions.
452	460			Sand, medium, and fine, some silt, light grey,
				micaceous.

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SAMPLE/CORE LOG (Cont.d)

BORING/WELL: PK-10 PREPARED BY: S. Zagaja PAGE: 5 of 5

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION
FROM	TO			
460	462	--	--	Sand, medium, and fine, some silt, light grey,
				micaceous.
462	477			Clay, some silt, very competent, medium grey, some iron
				concretions.
477	479			Sand, fine, trace medium, trace silt, light brown,
				micaceous.
479	485			Sand, fine, trace medium, trace silt, light brown,
				micaceous.
485	496			Sand, medium, trace fine, light brown, iron concretions,
				very soft.
496	499			Sand, fine to medium, trace silt, reddish brown grading
				to light grey, iron concretions.

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SAMPLE/CORE LOG

BORING/WELL: RB-11 PROJECT NO: LKB/Syosset Landfill NY0029008 PAGE: 1 of 4

SITE LOCATION: Syosset Recharge Basin on Belmont Circle DRILLING STARTED: 8/4/93 DRILLING COMPLETED: 9/26/93

TOTAL DEPTH DRILLED: 509 ft HOLE DIAMETER: 10/8 in TYPE OF SAMPLE/ CORING DEVICE: Barber - cuttings Mud/reverse - split-spoons

LENGTH & DIAMETER OF CORING DEVICE: 2 ft x 2 inches SAMPLING INTERVAL: continuous/ every 20 ft

LAND-SURFACE ELEVATION: { } SURVEYED { } ESTIMATED DATUM:

DRILLING FLUID USED: water/mud/water DRILLING METHOD: Barber/mud rotary/reverse rotary

DRILLING CONTRACTOR: Delta Well & Pump Co. DRILLER: John McAdden/ Joe Guggino HELPER: Mark/Rich/Brian

PREPARED BY: Sarah Zagaja/ Mike Breault HAMMER WEIGHT: 175 HAMMER DROP: 24 inches

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION	DRILLING METHOD
FROM	TO				
0	5	--	--	Top soil, dark brown, dry.	Barber
5	13	--	--	Sand, fine to coarse, and gravel, fine to	Barber
				coarse, light brown, dry.	
13	17	--	--	Sand, fine to coarse, and gravel, fine to	Barber
				coarse, light brown, dry.	
17	26	--	--	Sand, medium to coarse, some gravel, fine to	Barber
				medium, light brown, dry.	
26	33	--	--	Gravel, fine to coarse, some sand, medium to	Barber
				coarse, light brown, dry.	
33	38	--	--	Sand, medium to coarse, some gravel, fine to	Barber
				medium, trace coarse, light brown, dry.	
38	48	--	--	Sand, medium to coarse, trace fine, some	Barber
				gravel, fine to medium, light brown, dry.	
48	54	--	--	Sand, medium to coarse, trace gravel, fine,	Barber
				light brown.	
54	59	--	--	Sand, medium to coarse, some fine, some	Barber
				gravel, fine to medium, light brown, dry.	
59	63	--	--	Sand, medium, some fine, trace coarse, light	Barber
				brown, dry.	
63	75	--	--	Sand, medium to coarse, trace fine, some	Barber
				gravel, fine to medium.	
75	86	--	--	Sand, medium to coarse, some fine, trace	Barber
				gravel, fine, dry.	

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SAMPLE/CORE LOG (Cont.d)

BORING/WELL: RB-11 PREPARED BY: S. Zagaja/ M. Breault PAGE: 2 of 4

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION	DRILLING METHOD
FROM	TO				
86	96	--	--	Sand, fine to medium, light brown,	Barber
				slightly moist.	
96	106	--	--	Sand, fine to medium, light brown,	Barber
				slightly moist.	
106	113	--	--	Sand, fine to medium, trace clay, light	Barber
				grey to brown, moist.	
113	118	--	--	Sand, fine, some clay, trace medium sand,	Barber
				trace silt, light brown to grey, clay	
				is in stringers, moist. Magothy at	
				approximately 114-115 ft bgs.	
139	141	.5	16-21-	Sand, fine, some silt, trace clay, thin	Mud Rotary
			36-42	layers (1/4" - 1/2") of light grey,	
				rusty orange, and light brown, wet,	
				poorly sorted, moderately compact.	
159	161	1	21-32-	Sand, fine, some medium in top portion of	Mud Rotary
			39-46	spoon grading downward to sand, fine,	
				some silt, some iron oxide aggregates,	
				wet, moderately sorted, compact, brown,	
				rusty brown, and light grey layers.	
179	181	2	27-37-	Sand, fine, some silt (2" layers contain	Mud Rotary
			28-46	some clay), light brown to rusty brown,	
				trace grey layers, wet, moderately	
				compact.	
199	201	.5	29-33-	Sand, fine, trace medium, trace silt,	Mud Rotary
			38-47	light brown, with some grey and some	
				rusty brown layers, wet, compact,	
				moderately sorted.	
219	221	.75	33-38-	Sand, fine, trace silt, trace clay grading	Mud Rotary
			44-42	with depth to sand, fine, trace medium	
				light grey to tan, minimal iron staining,	
				wet, moderately sorted, compact.	
239	241	1	38-41-	Sand, fine, trace silt, light grey with	Mud Rotary
			46-51	minimal iron stained layers, wet, poorly	
				sorted, very compact, micaceous.	

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SAMPLE/CORE LOG (Cont.d)

BORING/WELL: RB-11 PREPARED BY: S. Zagaja/ M. Breault PAGE: 3 of 4

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION	DRILLING METHOD
FROM	TO				
259	261	1	46-39-	Sand, fine, trace silt, light grey to	Mud Rotary
			48-55	light brown, wet, micaceous, minimal	
				iron staining.	
279	281	1.5	35-32-	Sand, fine, some silt with two 2-inch	Mud Rotary
			46-49	layers which contain some clay, light	
				grey, micaceous, very compact, wet.	
299	301	.75	40-45-	Sand, medium, some fine, light greyish	Mud Rotary
			47-56	tan, some red layers, very compact, wet,	
				poorly sorted.	
319	321	.5	35-38-	Clay, trace silt, trace fine sand, well	Mud Rotary
			43-58	sorted, bottom 1 inch is sand, medium,	
				some fine, light greyish brown. Clay	
				portion is extremely compact, contains	
				fragments of lignite.	
339	341	1	37-30-	Sand, fine, trace medium, trace silt,	Mud Rotary
			35-46	light grey, micaceous, compact.	
359	361	1	33-39-	Sand, fine, some medium, light grey,	Mud Rotary
			38-49	micaceous, compact.	
379	381	.5	30-39-	Sand, medium, trace fine, micaceous,	Mud Rotary
			48-56	light grey, compact.	
399	401	1	43-38-	Sand, medium, trace fine, greyish-pink,	Mud Rotary
			41-52	compact, poorly sorted.	
419	421	2	35-23-	Clay, trace silt, light brownish grey,	Mud Rotary
			28-26	very competent, moist, slightly mottled.	
439	441	1	40-32-	Sand, medium, some fine, trace coarse,	Mud Rotary
			53-59	poorly sorted, relatively loose, light	
				grey, wet.	
459	461	.75	39-31-	Sand, medium and fine, light grey to tan,	Reverse Rotary
			38-32	poorly sorted, moderately loose, wet.	
				*NOTE: From approximately 180 ft through	
				259 ft there were some clay layers.	
				Apparently these layers were missed	
				in the spoons.	

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SAMPLE/CORE LOG (Cont.d)

BORING/WELL: RB-11 PREPARED BY: S. Zagaja/ M. Breault PAGE: 4 of 4

SAMPLE DEPTH (FT BELOW LAND SURFACE) FROM	TO	CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION	HNU (ppm)
484	486	1	46-36-	Silty clay, grey to whitish, moderately	Reverse Rotary
			37-41	plastic (medium plasticity), dry to	
				damp; trace sand, fine to medium.	
494	496	1	37-53-	Sand, fine, in 2-inch layers, tan to	Reverse Rotary
			47-45	yellow to brown, trace coarse, moderately	
				loose, wet, no silt, mainly quartz.	

GERAGHTY & MILLER, INC.

SAMPLE/CORE LOG

LKB - Syosset Landfill

BORING/WELL: RW-12 PROJECT NO: NY0029008 PAGE: 1 of 4

SITE LOCATION: Roadway - off of Gordon Drive

DRILLING STARTED: 8/25/93

DRILLING COMPLETED: 9/27/93

TOTAL DEPTH DRILLED: 500

HOLE DIAMETER: 21/10/8 inches

TYPE OF SAMPLE/ CORING DEVICE: Auger/cable tool - cuttings Mud rotary/reverse - split spoons

LENGTH & DIAMETER OF CORING DEVICE: 2 feet x 2 inches

SAMPLING INTERVAL: See log

LAND-SURFACE ELEVATION: { } SURVEYED { } ESTIMATED DATUM:

DRILLING FLUID USED: Water/mud/water

DRILLING METHOD: H.S.A./cable tool/ mud rotary/reverse rotary

DRILLING CONTRACTOR: Delta Well & Pump Co. DRILLER: Joe Guggino HELPER: Rich

PREPARED BY: Sarah Zagaja & David Vines HAMMER WEIGHT: 175 HAMMER DROP: 24 inches

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION	DRILLING METHOD
FROM	TO				
0	3	--	--	Topsoil, sand, medium to coarse and gravel,	H.S.A.
				fine to coarse, some cobbles, many roots,	
				dark brown, moist.	
3	8	--	--	Gravel, fine to coarse, some sand, medium	H.S.A.
				to coarse, some cobbles, fine to coarse,	
				poorly sorted, dry, medium brown.	
8	20	--	--	Gravel, fine to coarse, some sand, medium	H.S.A.
				to coarse, some cobbles, fine to coarse,	
				poorly sorted, dry, medium brown (some	
				intervals seemed to have only trace sand).	
20	28	--	--	Sand, medium to coarse, some gravel, fine	H.S.A.
				to medium, trace coarse, brown, poorly	
				sorted, dry.	
28	34	--	--	Sand, medium to coarse, and gravel, fine	H.S.A.
				to medium, trace coarse, brown, poorly	
				sorted, dry.	
34	48	--	--	Sand, medium to coarse, trace fine, some	H.S.A.
				gravel, fine to medium, dark brown, dry.	
48	52	--	--	Sand, medium to coarse, trace fine, some	H.S.A.
				gravel, fine to medium, dark brown, dry.	
52	61	--	--	Gravel, fine, some medium, some sand, medium	Cable Tool
				to coarse, brown, poorly sorted.	
61	65	--	--	Sand, medium and coarse, some gravel, fine	Cable Tool

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SAMPLE/CORE LOG (Cont.d)

BORING/WELL: RW-12 PREPARED BY: Sarah Zagaja/ David Vines PAGE: 2 of 4

SAMPLE DEPTH (FT BELOW LAND SURFACE) FROM	TO	CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION	DRILLING METHOD
				to medium, little silt, poorly sorted,	
				light brown.	
72	76	--	--	Sand, coarse, some medium, some gravel,	Cable Tool
				fine, trace medium, brown, faint odor.	
				HNU = 2 ppm.	
78	83	--	--	Sand, medium, some fine, some coarse,	Cable Tool
				trace fine gravel, medium brown, poorly	
				sorted, faint odor. HNU = 1 ppm.	
83	85	--	--	Sand, fine, little silt, some clay, light	Cable Tool
				brown to grey, well sorted (clay is in	
				thin layers). HNU = 1 ppm.	
89	94	--	--	Sand, fine, trace medium, little clay (in	Cable Tool
				layers), little silt, well sorted,	
				light brown to grey. HNU = 0 ppm.	
94	96	--	--	Sand, fine, trace medium, little clay (in	Cable Tool
				layers), little silt, well sorted,	
				light brown to grey. HNU = 0 ppm.	
96	105	--	--	Sand, medium, some fine, some silt, trace	Cable Tool
				clay, light brown, poorly sorted.	
				HNU = 0 ppm.	
119	121	1.0	21,26,	Sand, fine, light brown to white, some	Mud Rotary
			34,41	silt, well sorted. OVA = 0.2	
139	141	1.0	27,38,	Sand, fine, some very fine, orange to	Mud Rotary
			34,35	white, trace silt, poorly sorted	
				micaceous. OVA = 0.5	
159	161	0.75	47,55,	Sand, medium, some fine, trace silt, light	Mud Rotary
			78,83	brown to brown, moderately sorted,	
				micaceous. OVA = 0.5	
170	175	--	--	Streaks of clay in cuttings, clumps of	Mud Rotary
				white and clumps of orange (separate)	
				present.	
179	181	0.75	21,29,	Sand, fine, some medium, light brown to	Mud Rotary
			34,36	brown, well sorted. HNU = 1 ppm	

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SAMPLE/CORE LOG (Cont.d)

BORING/WELL: RW-12 PREPARED BY: Sarah Zagaja/ David Vines PAGE: 3 of 4

SAMPLE DEPTH (FT BELOW LAND SURFACE)		CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION	DRILLING METHOD
FROM	TO				
199	201	0.70	38,50	Sand, fine, some very fine, light brown	Mud Rotary
			44,49	to orange brown, well sorted.	
				OVA = 3.5	
219	221	1.75	31,24,	N.R. first time down - top 3 inches silty	Mud Rotary
			13,29	fine sand, whitish grey, - bottom	
				18 inches sand, fine, some very fine,	
				some silt, tan/white to light grey, well	
				sorted. OVA = 5.0	
239	241	0.45	63,49,	N.R. first attempt - silty sand, fine to	Mud Rotary
			37,51	very fine, tan and light grey, well	
				sorted. OVA = 1.5 ppm; HNU = 0.4	
259	261	0.75	42,31,	Sand, fine, some very fine, and silt,	Mud Rotary
			38,27	shades of tan-brown, very compact and	
				well sorted.	
279	281	1.0	29,33,	Sand, fine, some medium, some silt, light	Mud Rotary
			44,26	brown to brown, well sorted.	
299	301	1.5	37,26,	Sand, fine, some medium, some silt, light	Mud Rotary
			43,50	tan to orange brown, well sorted.	
319	321	1.25	32,38,	Sand, fine, trace medium, some silt, tan	Mud Rotary
			45,30	to orange brown, well sorted.	
339	341	0.5	35,33,	Sand, fine, some medium, trace coarse,	Mud Rotary
			47,41	light tanish to white, poorly sorted.	
359	361	0.35	25,27,	Sand, medium, some coarse, some fine, tan	Mud Rotary
			35,28	to brown, some gravel, iron oxide, poorly	
				sorted.	
379	381	1.75	25,29,	Sand, fine to very fine, and silt, trace	Mud Rotary
			39,42	medium sand, light grey to tan, well	
				sorted.	
399	401	1.0	29,27,	Sand, fine to medium, some silt, light tan	Mud Rotary
			39,32	(almost white) to light brown, poorly	
				sorted.	
419	421	1.9	21,27,	Sand, fine to very fine, some silt, light	Mud Rotary
			16,30	grey to light brown, some iron oxide,	

GERAGHTY & MILLER, INC.

SAMPLE/CORE LOG (Cont.d)

BORING/WELL: RW-12 PREPARED BY: Sarah Zagaja/ David Vines PAGE: 4 of 4

SAMPLE DEPTH (FT BELOW LAND SURFACE) FROM	TO	CORE RECVRY (FT)	BLOW COUNTS PER 6 INCHES	SAMPLE/CORE DESCRIPTION	DRILLING METHOD
				well sorted. Last 3" very incompetant	
				light grey clayey sand.	
420	430			White clay in cuttings.	Mud Rotary
439	441	0.75	18,22,	Sand, fine to medium, some silt, trace	Mud Rotary
			28,30	gravel, light grey to tan, very well	
				sorted, some iron oxide, white clay	
				stringers present.	
450	460			Gravel, medium in cuttings.	Mud Rotary
459	461	1.25	33,31,	Top 5 inches-clayey sand, white with fine	Mud Rotary
			28,34	sand - bottom 10 inches-sand, medium to	
				fine, trace silt, light grey to tan,	
				iron oxide staining, poorly sorted.	
470	475			Fine sand, iron oxide concretions,	Mud Rotary
				clayey sand (light brown) and coarse	
				gravel in cuttings.	
475	485			White clay then fine and very fine tan	Reverse Rotary
				sand in cuttings.	
484	486	0.5	25,32,	Sand, fine to medium, some coarse, little	Reverse Rotary
			38,46	silt, light tan; iron oxide present,	
				very compact, poorly sorted.	
				HNU = 0.5 ppm	
484	494			Some white clay stringers, some fine brown	Reverse Rotary
				sand, and a lot of coarse gravel in	
				cuttings.	
494	496	1.25	56,49,	Sand, fine to coarse, some gravel, medium	Reverse Rotary
			48,53	to coarse, white/tan, trace clay	
				stringers, white; iron oxide, very	
				compact, poorly sorted.	
495	500			Cuttings have fine brown sand and medium	Reverse Rotary
				to coarse gravel.	

APPENDIX D

STATISTICAL PROCEDURE USED TO ESTABLISH TERMINATION CRITERIA

APPENDIX D

STATISTICAL PROCEDURE USED TO ESTABLISH TERMINATION CRITERIA

The termination depths of the two exploratory borings (SY-3DD and PK-10D) were determined by using statistical methods to analyze water-quality data from public supply and monitoring wells near the Syosset Landfill. Initially, the termination criteria were statistically determined using background water-quality data obtained in accordance with the method specified in the Work Plan and Site Operations Plan. Action levels for each primary and secondary leachate parameter were calculated by adding two standard deviations (σ) to the average concentration ($\bar{x}$) calculated for each respective parameter ($\bar{x} + 2\sigma$). These data are presented in Table D-1. However, as the data in Table D-1 shows only a limited data set was obtained (15 to 47 data points per parameter) using the specified statistical method, and the upper confidence limits were, in Geraghty & Miller's opinion, too high to be indicative of background water-quality conditions. Therefore, additional water-quality data were obtained and two other statistical methods, which are more appropriate for the number of data points, were used to compute the action levels. These two equations were used to determine the 95 percent confidence limits about the median and average leachate indicator concentrations and are presented below.

Lower Limit		*Upper Limit*
$\bar{x} - 1.96 \frac{\sigma}{\sqrt{n}}$	$\leq$ *average* $\leq$	$\bar{x} + 1.96 \frac{\sigma}{\sqrt{n}}$
$X_{\frac{n+1}{2}} - 1.96 \frac{\sqrt{n}}{2}$	$\leq$ *median* $\leq$	$X_{\frac{n+1}{2}} + 1.96 \frac{\sqrt{n}}{2}$

$\bar{x}$ = *average concentration.*
σ = *standard deviation.*
n = *number of observations.*
Lower limit about median/average interpolated ordered data set.
Upper limit about median/average interpolated ordered data set.

$X_{\frac{n+1}{2}}$ = *the* $X_{\frac{n+1}{2}}$ *value of the ordered data.*

The statistical data generated from these two equations, including the action levels used to determine the termination criteria, are summarized in Table D-2. As can be seen from Table D-2, the limits about the median and average are similar, and the upper limits about the average were selected as the action levels for each leachate parameter except ammonia. No action level was calculated for ammonia (primary indicator) using the selected equation because there were still too few data points for this particular parameter (This parameter was not an analyte for the water districts). Therefore, the action level was set at twice the detection limit of the ammonia meter used (0.12 milligrams per liter [mg/L]).

According to the Work Plan, each exploratory boring was to be terminated when the concentrations of the three primary leachate indicators were below their respective action levels in two consecutive samples. However, if only one of the primary indicators remained slightly above its action level in consecutive samples, then the action levels of the three secondary leachate indicator parameters were compared to field analytical results and the boring was terminated when one or more of the secondary action levels were not exceeded.

Table D-1. Preliminary Statistical Evaluation of Leachate Indicator Parameter Data for Wells Within a two-Mile Radius of the Syosset Landfill, Syosset, New York.

Parameter	No. of Points	Average	Median	Standard Deviation (S.D.)	Confidence Limits About the Average (Lower)	(Upper)	Confidence Limits About the Median l (Lower)	u (Upper)	Action Levels (Average+2S.D.)
Alkalinity	24	13.1	10.2	12.3	8.21	18.02	6.34	16	37.64
Hardness	24	48.6	47.0	20.8	40.24	56.92	32	60.2	90.28
Chloride	40	18.7	13.7	19.7	12.62	24.84	12.5	15.72	58.15
Specific Conductance	44	186.2	162.7	103.6	155.57	216.79	150	196	393.37
pH	47	5.6	5.7	0.5	5.46	5.75	5.5	5.8	6.62
Temperature	15	13.8	14.0	1.4	13.11	14.49	13	15	16.55

Table D-2. Final Statistical Evaluation of Leachate Indicator Parameter Data for Wells Within a two-Mile Radius of the Syosset Landfill, Syosset, New York.

Parameter	No. of Points	Average	Median	Standard Deviation (S.D)	Confidence Limits About the Average (Lower)	(Upper) (a)	Confidence Limits About the Median l (Lower)	u (Upper)	(Average+2S.D.)
Alkalinity	115	9.0	6.0	9.1	7.37	10.69	5.0	7.0	27.20
Hardness	115	38.8	33.0	23.1	34.58	43.03	30	39	85.08
Chloride	131	16.6	13.0	13.9	14.25	19.00	12	14.4	44.34
Specific Cond.	44	186.2	162.7	103.6	155.57	216.79	150	196	393.37
pH	47	5.6	5.7	0.5	5.46	5.75	5.5	5.8	6.62
Temperature	15	13.8	14.0	1.4	13.11	14.49	13	15	16.55

Shading represents the most appropriate limits based on the data set.

(a) Selected as action level.

APPENDIX E

GEOPHYSICAL LOGS

COMPANY: GERAGHTY AND MILLER

HOLE ID: SY3DD

LOCATION: SYOSSET

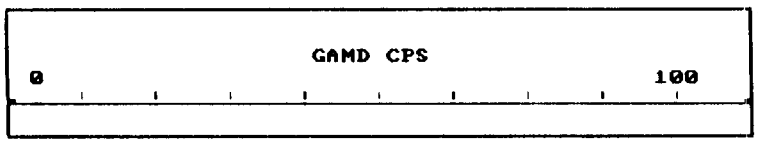
DATE: 12-2-92

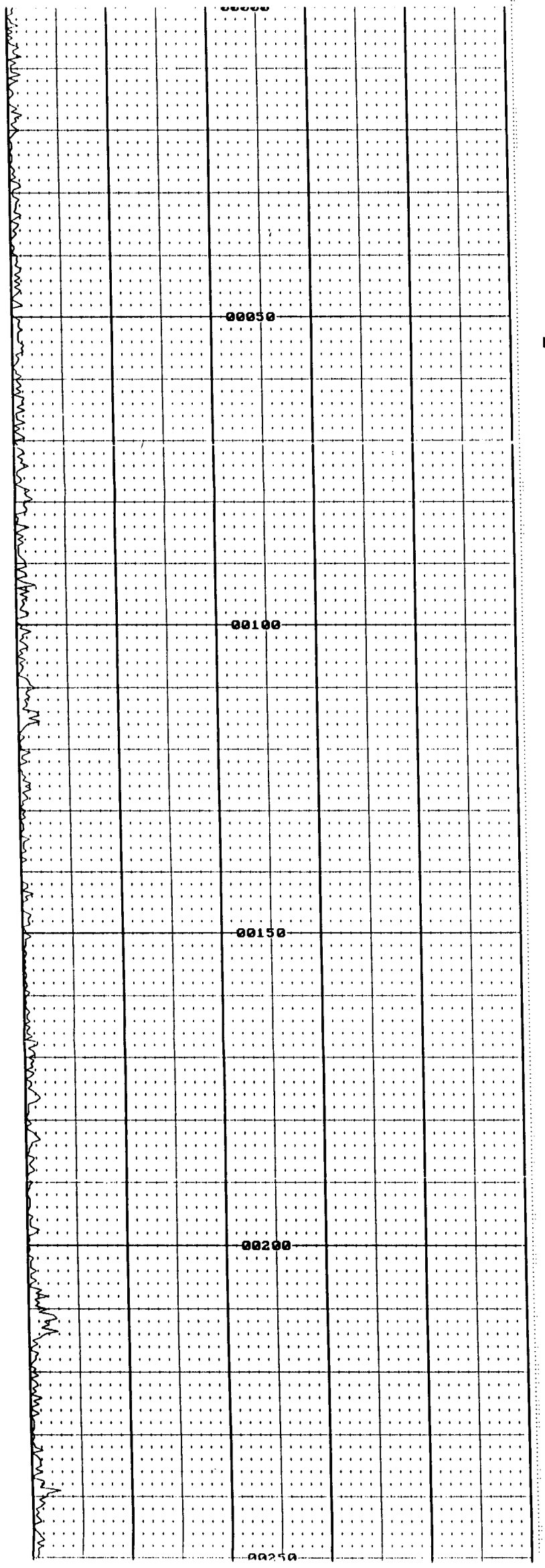
TIME: 0120

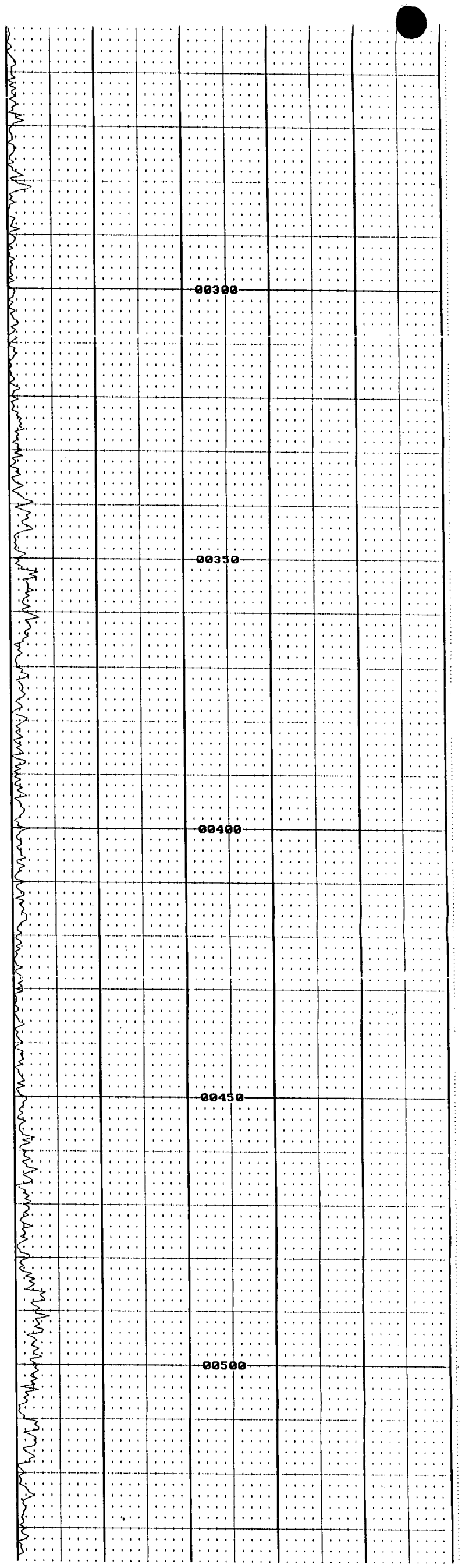
OPERATOR: DM

COMMENT1: GAMMA UP

COMMENT2:







COMPANY: GERAGHTY AND MILLER

HOLE ID: PK-10DG2

LOCATION: SYOSSET

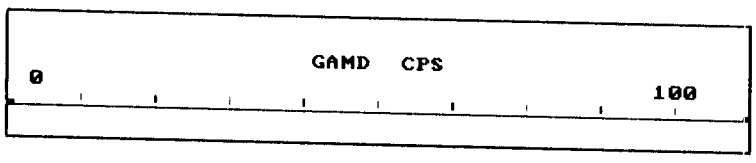
DATE: 12-29-92

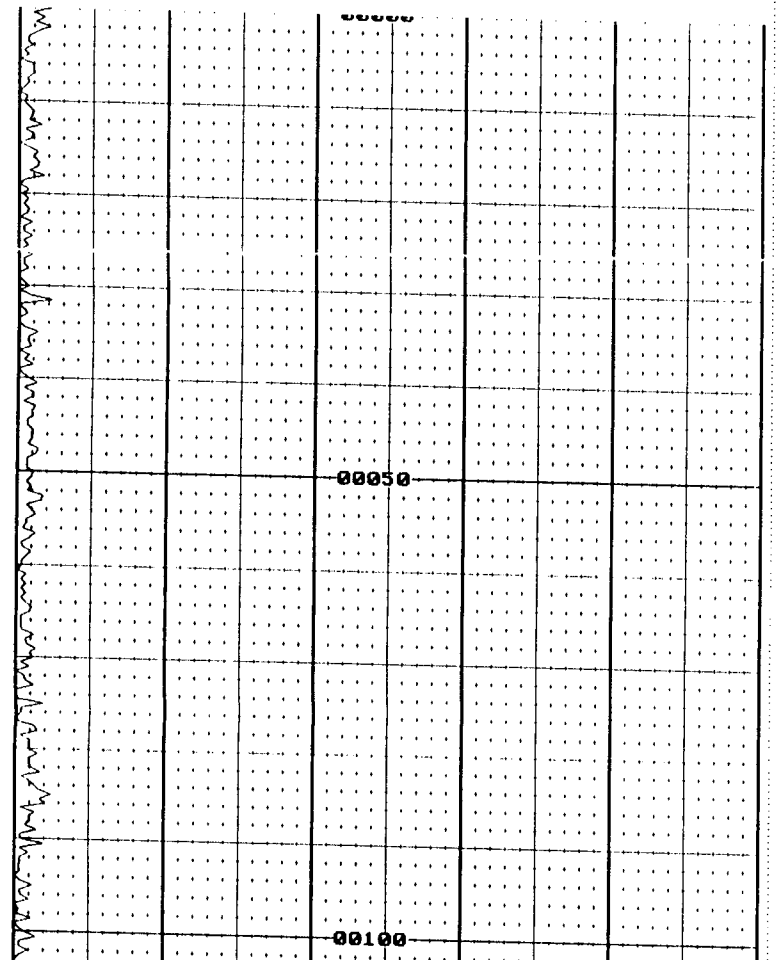
TIME: 1100

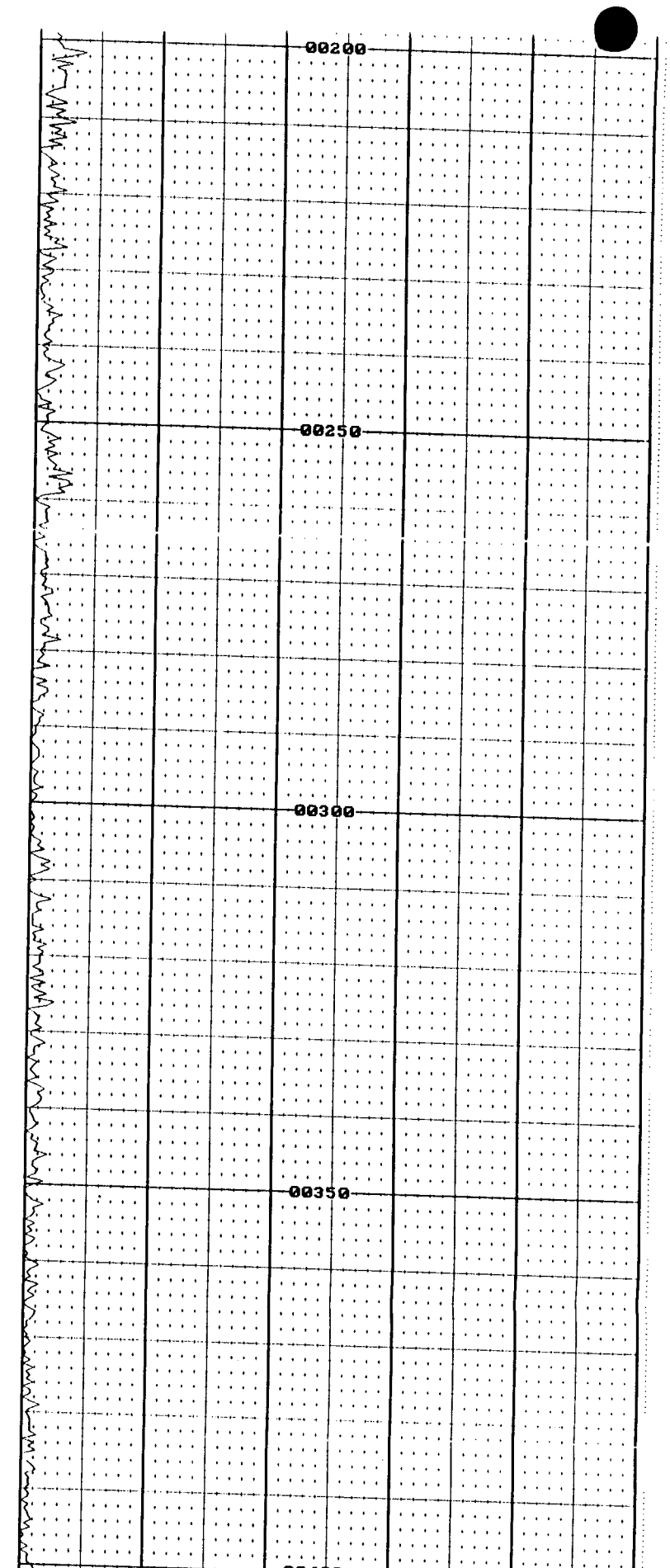
OPERATOR: GE

COMMENT1: GAMMA UP

COMMENT2:







COMPANY: GERAGHTY AND MILLER

HOLE ID: RB-11

LOCATION: SYOSSET

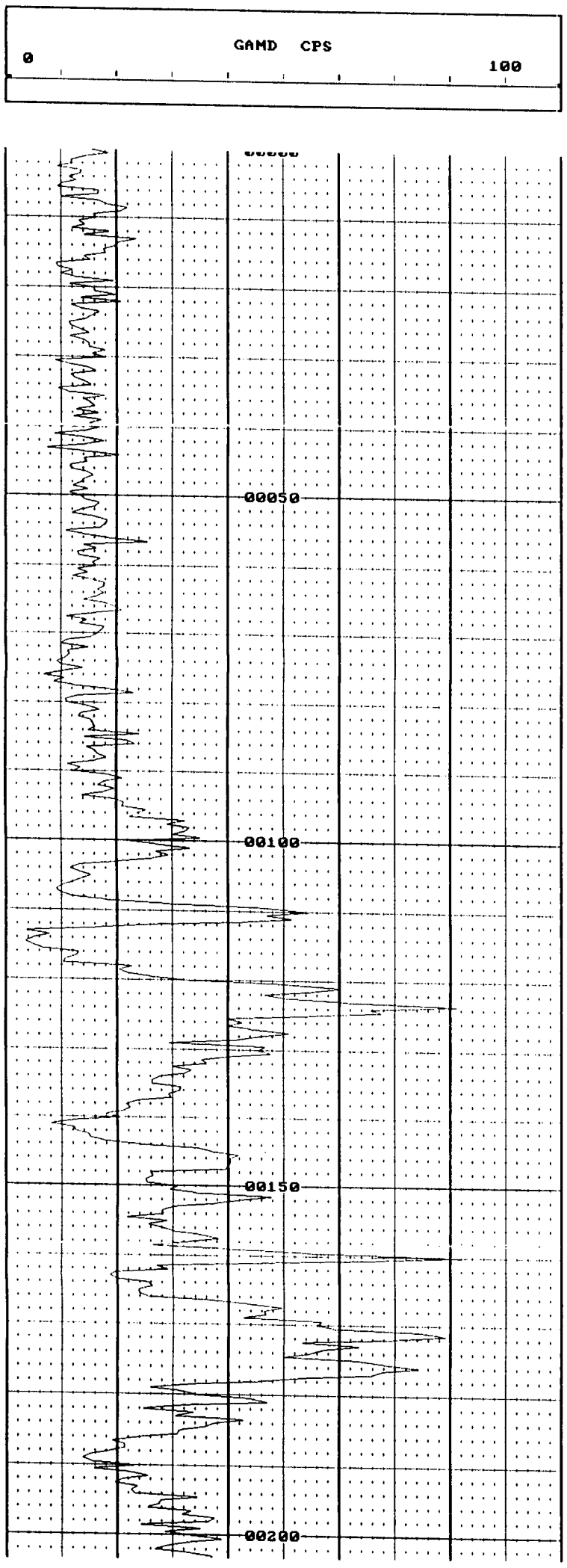
DATE: 8-9-93

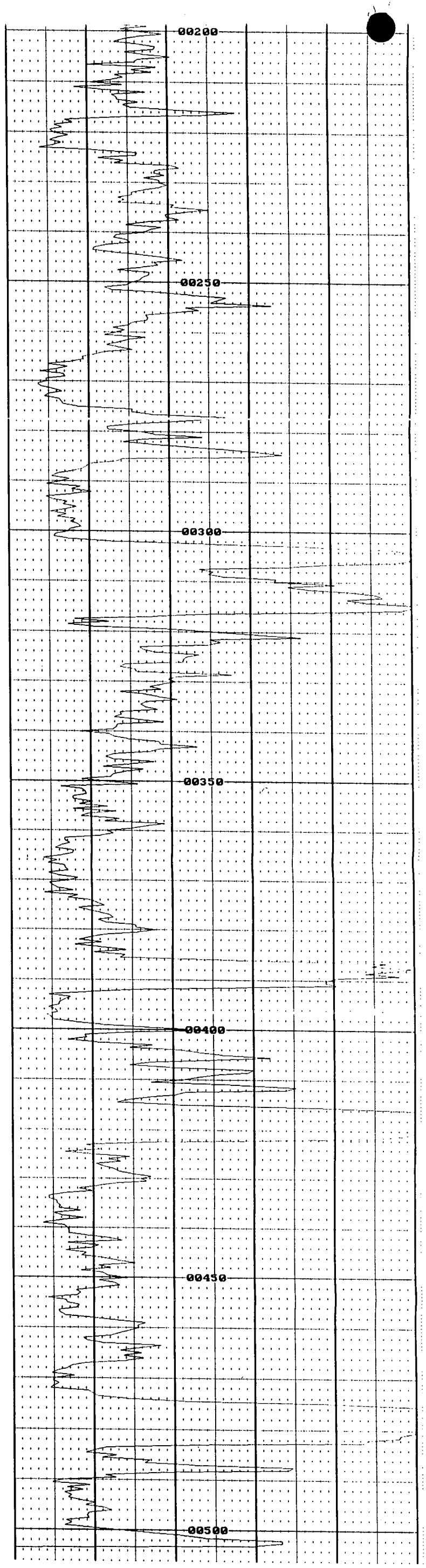
TIME: 1815

OPERATOR: GE

COMMENT1: GAMMA UP

COMMENT2:





COMPANY: GERAGHTY AND MILLER

HOLE ID: RB-11

LOCATION: SYOSSET

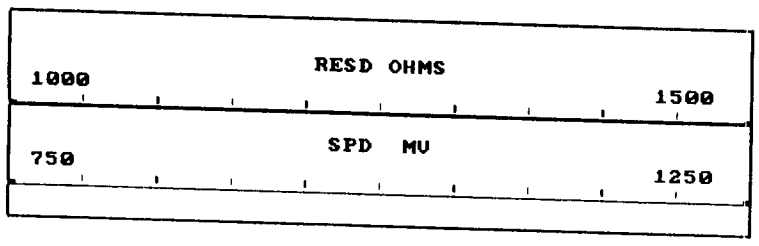
DATE: 8-9-93

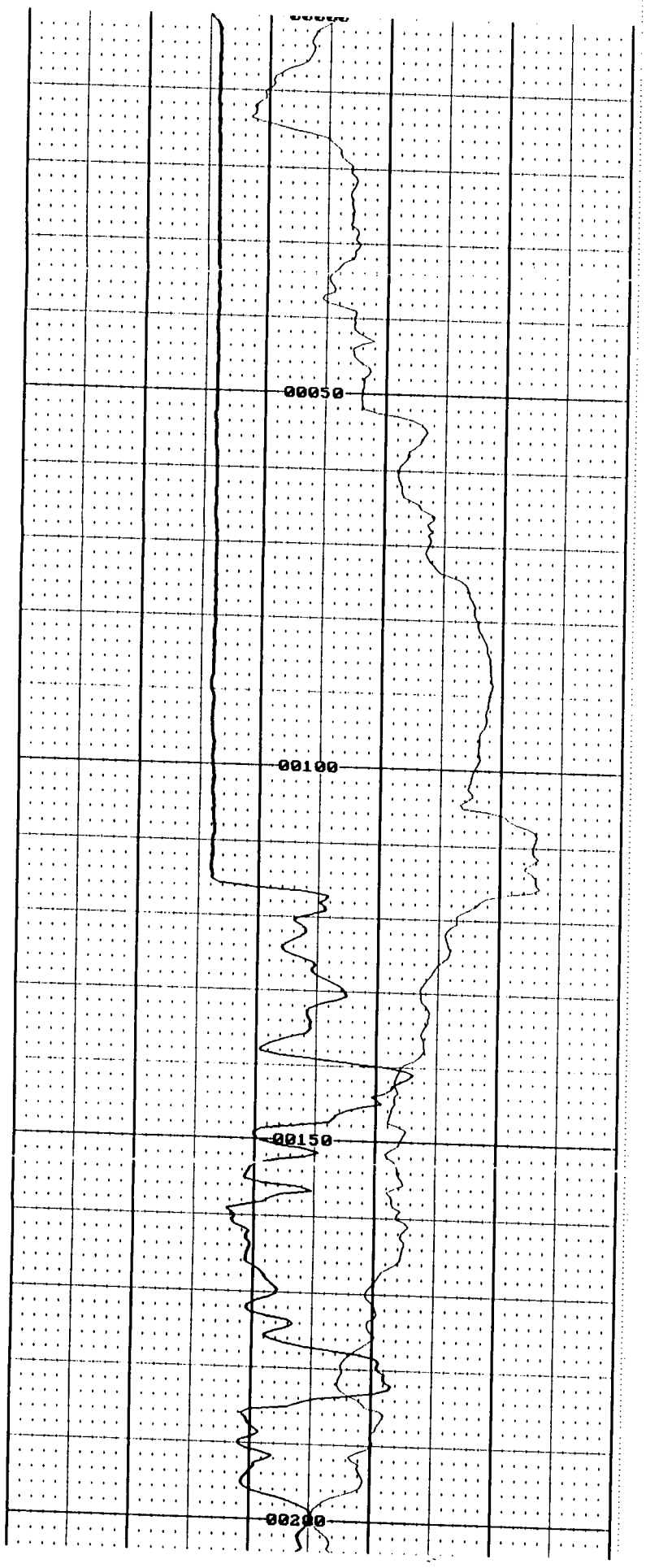
TIME: 1815

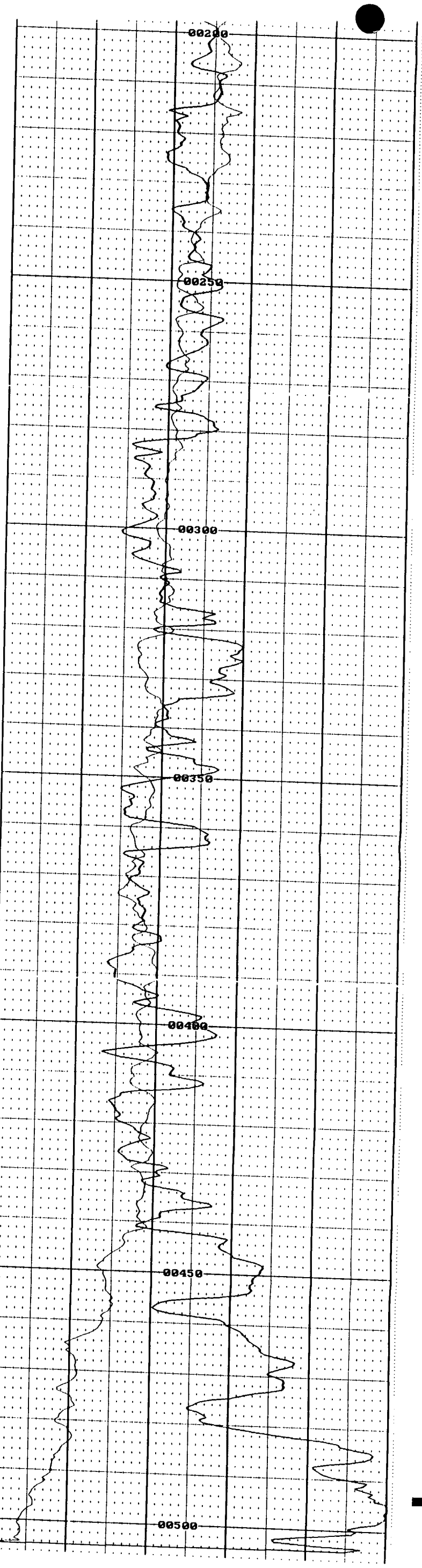
OPERATOR: GE

COMMENT1: R-SP UP

COMMENT2:







COMPANY: GERAGHTY AND MILLER

HOLE ID: RW-12D

LOCATION: SYOSSET

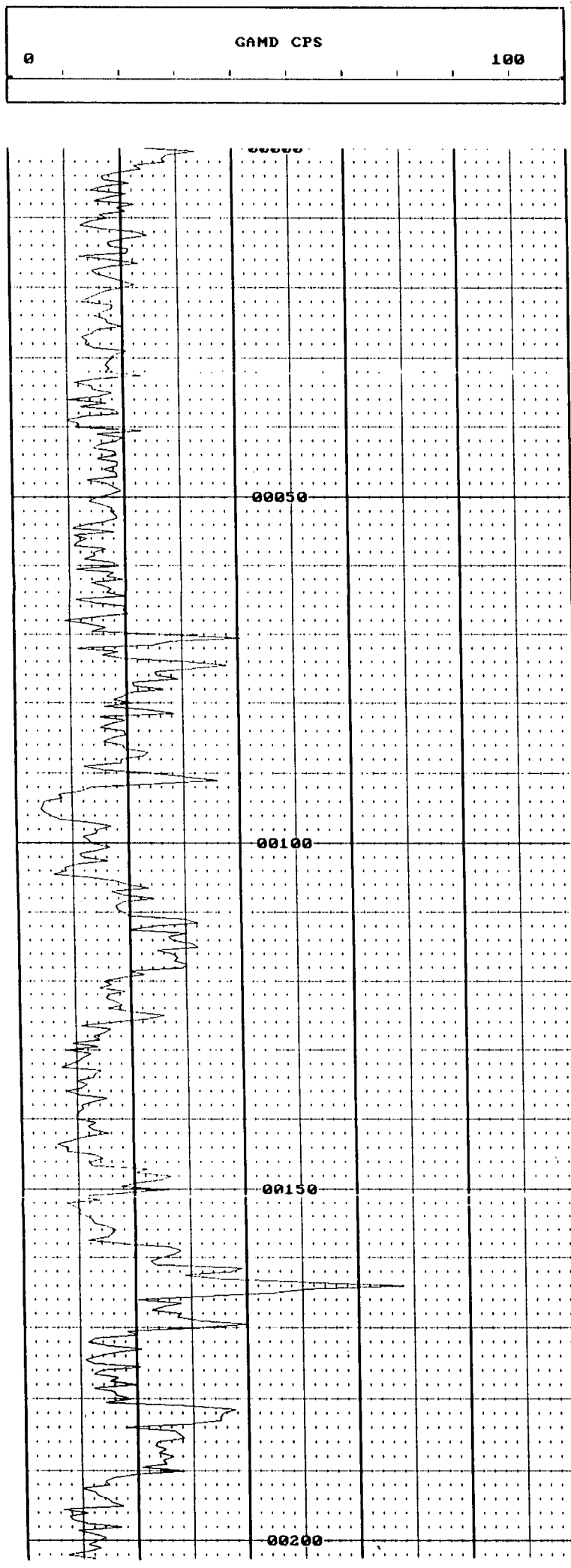
DATE: 9-23-93

TIME: 1700

OPERATOR: GE

COMMENT1: GAMMA UP

COMMENT2:



COMPANY: GERAGHTY AND MILLER

HOLE ID: RW-12D

LOCATION: SYOSSET

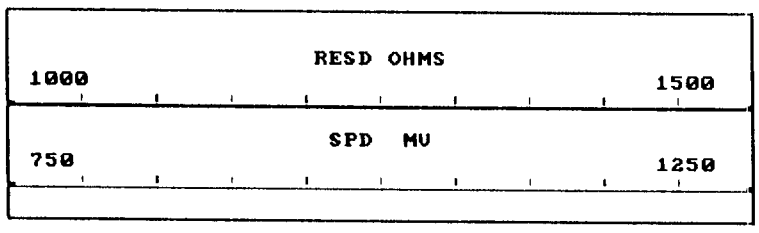
DATE: 9-23-93

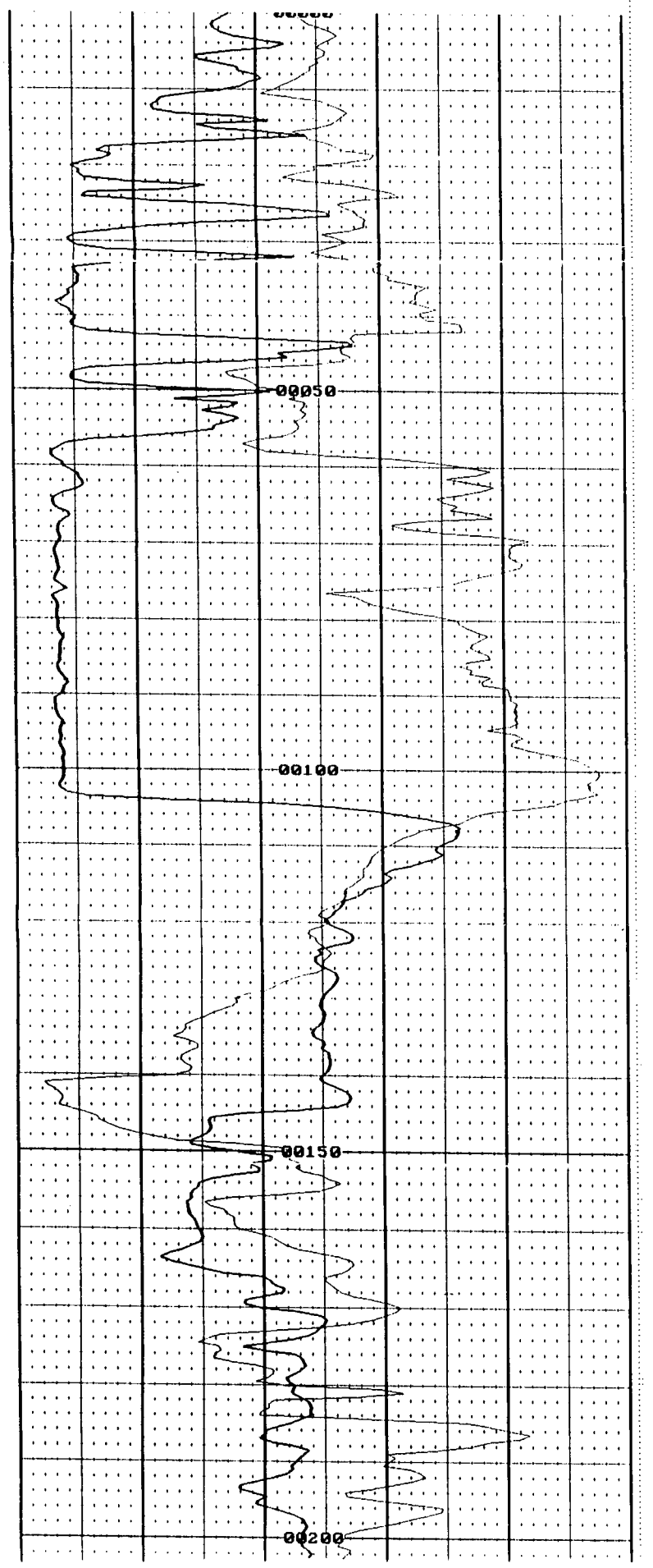
TIME: 1700

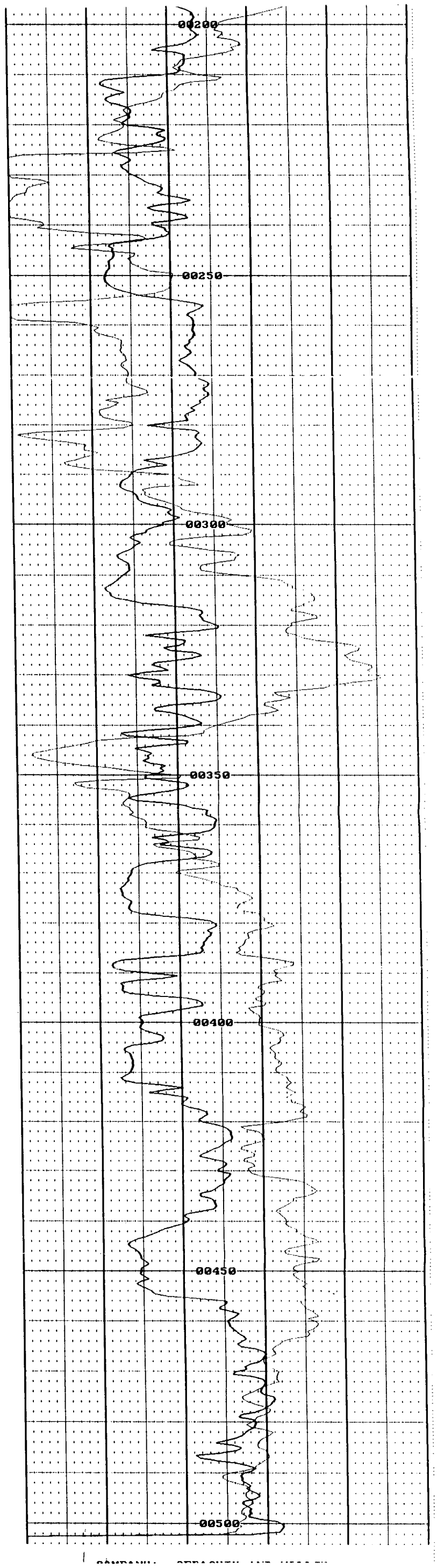
OPERATOR: GE

COMMENT1: R-SP UP

COMMENT2:





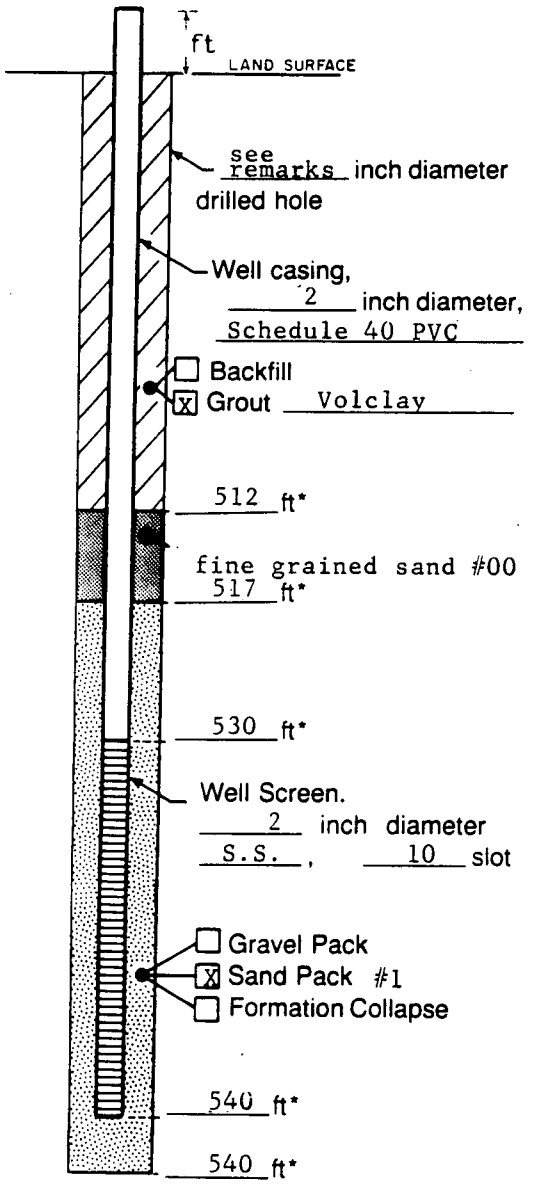


APPENDIX F

MONITORING WELL CONSTRUCTION LOGS

GERAGHTY & MILLER, INC.
Ground-Water Consultants

WELL CONSTRUCTION LOG
(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project LKB - Syosset Landfill Well SY3DD

Town/City Syosset

County Nassau State New York

Permit No. _____

Land-Surface Elevation

and Datum _____ feet ☐ Surveyed

_____ ☐ Estimated

Installation Date(s) 11/9/92 to 12/9/92

Drilling Method Barber (modified air rotary)

Drilling Contractor Catoh

Drilling Fluid Air, water

Development Technique(s) and Date(s)

Compressed Air - January 1993

Final Turbidity = 7 NTUs

Fluid Loss During Drilling Approx. 12,000 gallons

Water Removed During Development 27,000 gallons

Static Depth to Water 111.2 feet below M.P.

Pumping Depth to Water not measured feet below M.P.

Pumping Duration _____ hours

Yield 25 gpm Date _____

Specific Capacity _____ gpm/ft

Well Purpose monitoring

Remarks Well was drilled with:

16-inch diameter steel casing 0-118 ft

10-inch diameter steel casing 0-318 ft

8-inch diameter steel casing 0-464 ft

6-inch diameter steel casing 0-540 ft

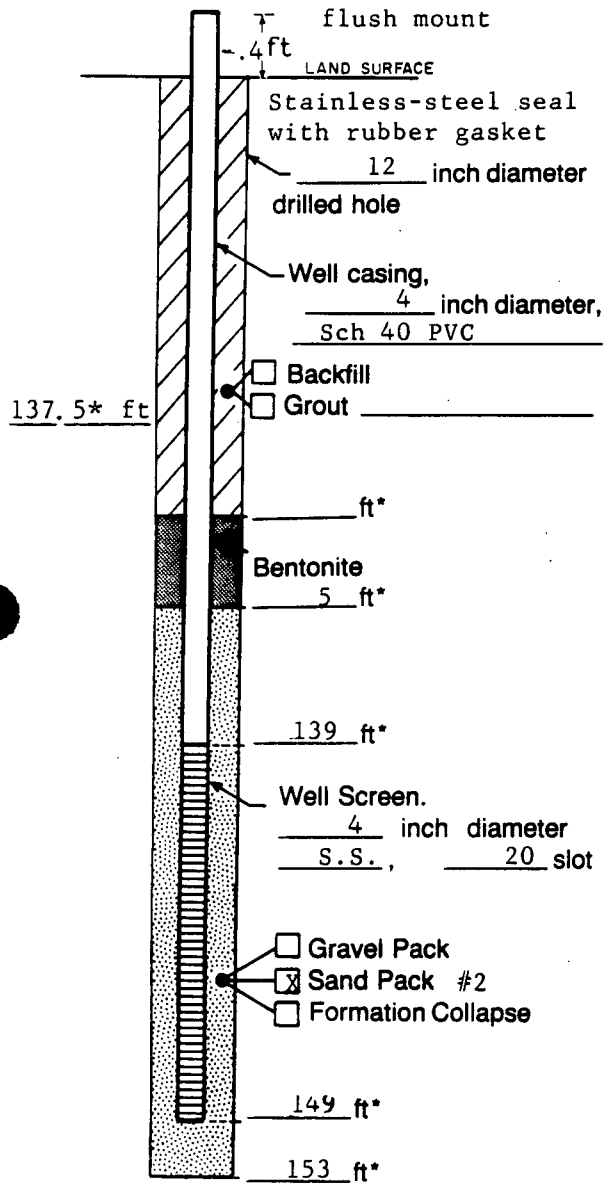
The 16, 10, and 8-inch casings were left in place.

The 6-inch was pulled back to 528 ft.

Prepared by Sarah Zagaja

GERAGHTY & MILLER, INC.
Environmental Services

WELL CONSTRUCTION LOG
(UNCONSOLIDATED)



Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

LKB -

Project Syosset Landfill OU2 RI Well PK-10S

Town/City Syosset

County Nassau State NY

Permit No. --

Land-Surface Elevation

and Datum _____ feet ☐ Surveyed

_____ ☐ Estimated

Installation Date(s) 3/24/93, 3/25/93

Drilling Method Barber* and Cable-Tool*

Drilling Contractor Delta

Drilling Fluid Water

Development Technique(s) and Date(s)

Submersible pump with backwashing

3/26/93, 3/29/93, 3/30/93

Fluid Loss During Drilling 2,000 gallons

Water Removed During Development 19,000 gallons

Static Depth to Water 110 feet below M.P.

Pumping Depth to Water 137 feet below M.P.

Pumping Duration 15 hours

Yield 40 gpm Date 3/30/93

Specific Capacity 1.5 gpm/ft

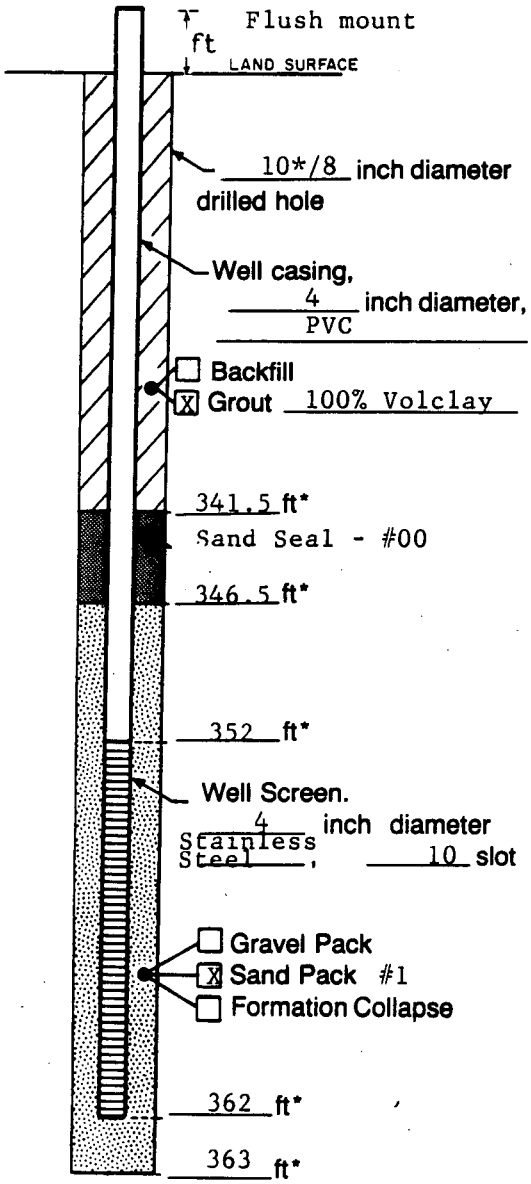
Well Purpose Monitoring

Remarks * 10-inch surface casing was installed to 137.5 ft by the barber rig (modified air rotary method) and the cable-tool rig was used to install the remainder of the borehole (to 153 ft). The 10-inch steel casing was left in place.
Turbidity (final) = 25 NTUs

Prepared by Sarah Zagaja

GERAGHTY & MILLER, INC.
Environmental Services

WELL CONSTRUCTION LOG
(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project LKB - Syosset Landfill Well PK-10I

Town/City Syosset

County Nassau State New York

Permit No. --

Land-Surface Elevation

and Datum _____ feet ☐ Surveyed

_____ ☐ Estimated

Installation Date(s) April 14, 1993

Drilling Method mud rotary/reverse rotary

Drilling Contractor Delta Well and Pump Co.

Drilling Fluid mud/water

Development Technique(s) and Date(s)

Compressed air w/surging - 4/22/93

Fluid Loss During Drilling approximately 500 gallons

Water Removed During Development 8,000 gallons

Static Depth to Water 106 feet below M.P.

Pumping Depth to Water _____ feet below M.P.

Pumping Duration _____ hours

Yield _____ gpm Date _____

Specific Capacity _____ gpm/ft

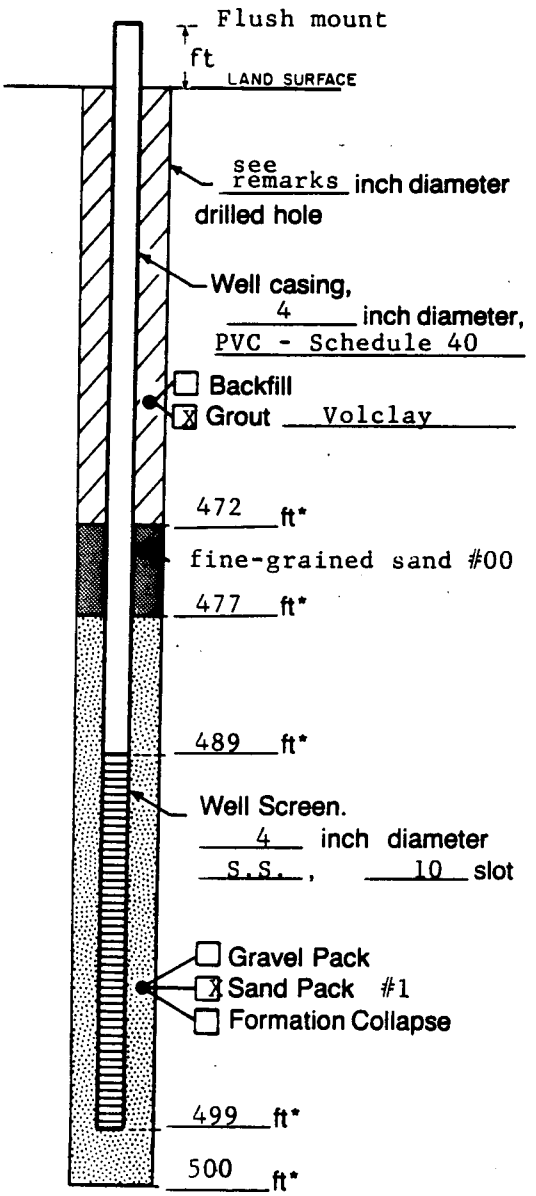
Well Purpose monitoring

Remarks *A 10-inch diameter steel surface casing, installed to 128 ft below grade by the cable-tool drilling method, was left in place. The borehole was then drilled to 328 ft by the mud rotary drilling method followed by the reverse rotary drilling method which was used to drill to the final depth.

Prepared by Sarah Zagaja

GERAGHTY & MILLER, INC.
Environmental Services

WELL CONSTRUCTION LOG
(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project LKB - Syosset Landfill Well PK-10D

Town/City Syosset

County Nassau State New York

Permit No. _____

Land-Surface Elevation

and Datum _____ feet ☐ Surveyed

_____ ☐ Estimated

Installation Date(s) 12/10/93 to 12/31/92

Drilling Method Barber (modified air rotary)

Drilling Contractor Catoh

Drilling Fluid air, water

Development Technique(s) and Date(s)

Compressed Air - January 7, 8

Final Turbidity = 25 NTUs

Fluid Loss During Drilling Approximately 8,000 gallons

Water Removed During Development 15,000 gallons

Static Depth to Water 116 ± feet below M.P.

Pumping Depth to Water not measured feet below M.P.

Pumping Duration _____ hours

Yield 25-30 gpm Date _____

Specific Capacity _____ gpm/ft

Well Purpose monitoring

Remarks Well was drilled with:

16-inch diameter steel casing 0-118 ft

10-inch diameter steel casing 0-460 ft

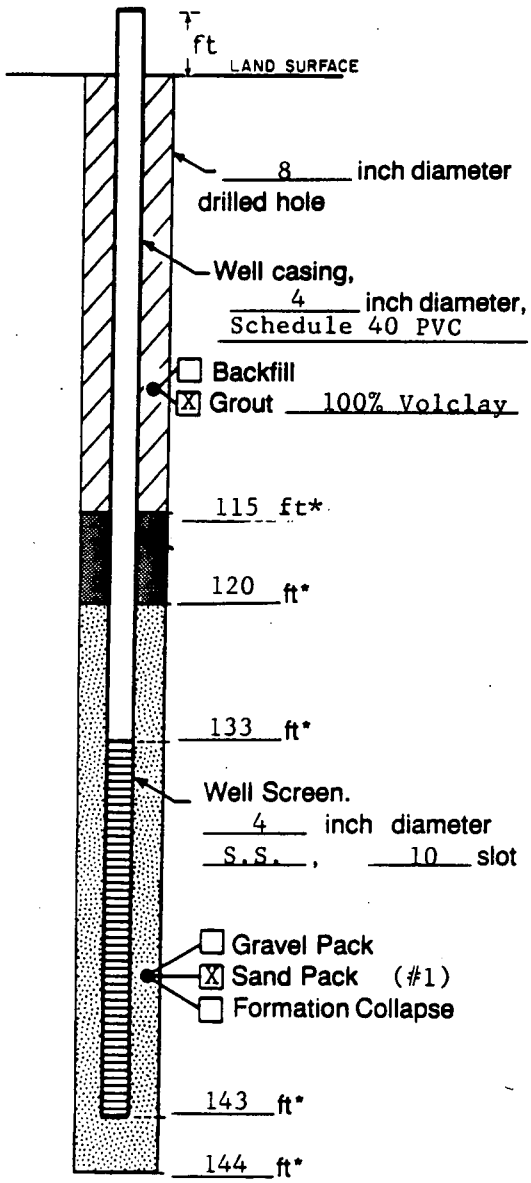
8-inch diameter steel casing 0-500 ft

The 16-inch and 10-inch casings were left in place and the 8-inch was pulled back to 484 ft.

Prepared by Sarah Zagaja

GERAGHTY & MILLER, INC.
Environmental Services

WELL CONSTRUCTION LOG
(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project LKB/Syosset Landfill Well RB-11S

Town/City Syosset

County Suffolk State New York

Permit No. _____

Land-Surface Elevation

and Datum _____ feet ☐ Surveyed

_____ ☐ Estimated

Installation Date(s) August 26, 1993

Drilling Method Hollow-Stem Auger

Drilling Contractor Delta Well and Pump Co.

Drilling Fluid Water (to suppress heave)

Development Technique(s) and Date(s)

Submersible pump - 9/2/93

Fluid Loss During Drilling 1200 gallons

Water Removed During Development 2430 gallons

Static Depth to Water 109 feet below M.P.

Pumping Depth to Water * feet below M.P.

Pumping Duration 6.75 hours

Yield 6 gpm Date 9/2/93

Specific Capacity _____ gpm/ft

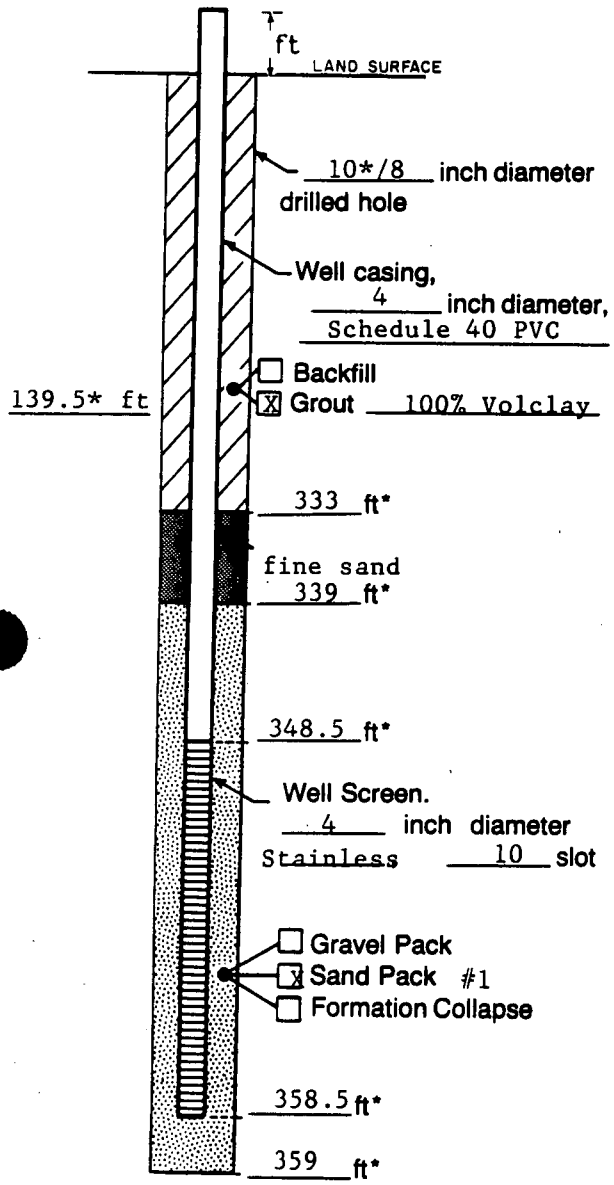
Well Purpose Monitoring

Remarks * Water depth indicator could not reach the water table during pumping due to tangling with the pump and hose.

Prepared by Sarah Zagaja

GERAGHTY & MILLER, INC.
Environmental Services

WELL CONSTRUCTION LOG
(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project LKB/Syosset Landfill Well RB-11I

Town/City Syosset

County Nassau State New York

Permit No. _____

Land-Surface Elevation

and Datum _____ feet ☐ Surveyed

_____ ☐ Estimated

Installation Date(s) August 19, 1993

Drilling Method Barber*/mud-reverse rotary

Drilling Contractor Delta Well & Pump Co.

Drilling Fluid mud/water

Development Technique(s) and Date(s)

Compressed air - 9/1/93

Fluid Loss During Drilling approximately 1,500 gallons

Water Removed During Development 6,000 gallons

Static Depth to Water 109 feet below M.P.

Pumping Depth to Water _____ feet below M.P.

Pumping Duration 2.5 hours

Yield 40 gpm Date _____

Specific Capacity _____ gpm/ft

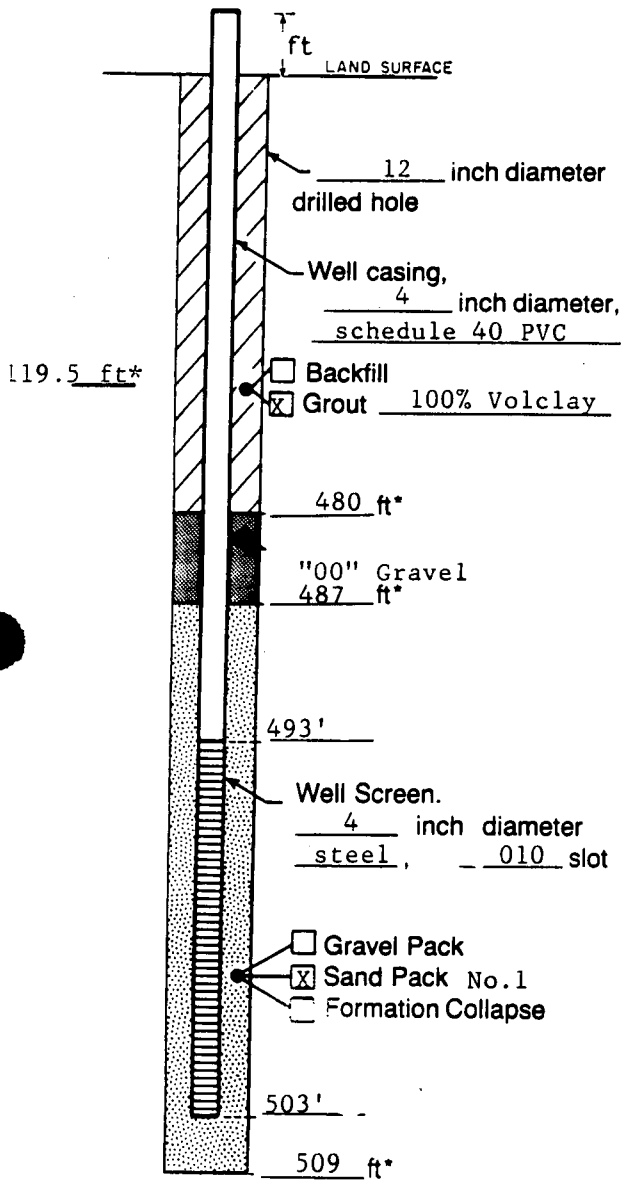
Well Purpose Monitoring

Remarks *10-inch diameter steel casing was installed by the Barber Drilling Method to 139.5 ft. The borehole was drilled to 329 ft by the mud rotary method and the final 30 ft was installed by the reverse rotary method.

Prepared by Sarah Zagaja

GERAGHTY & MILLER, INC.
Environmental Services

WELL CONSTRUCTION LOG
(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

LKB/Syosset Landfill
Project NY0029.008 Well RB-11D
Town/City Syosset, NY
County Nassau State NY
Permit No. _____
Land-Surface Elevation
and Datum _____ feet ☐ Surveyed
_____ ☐ Estimated
Installation Date(s) 8/09/93
Drilling Method direct mud rotary; reverse rotary (water only)
Drilling Contractor Delta Well and Pump
Drilling Fluid 0-120 air, 120-473 mud, 473-509 water

Development Technique(s) and Date(s)
Compressed air - 9/1/93

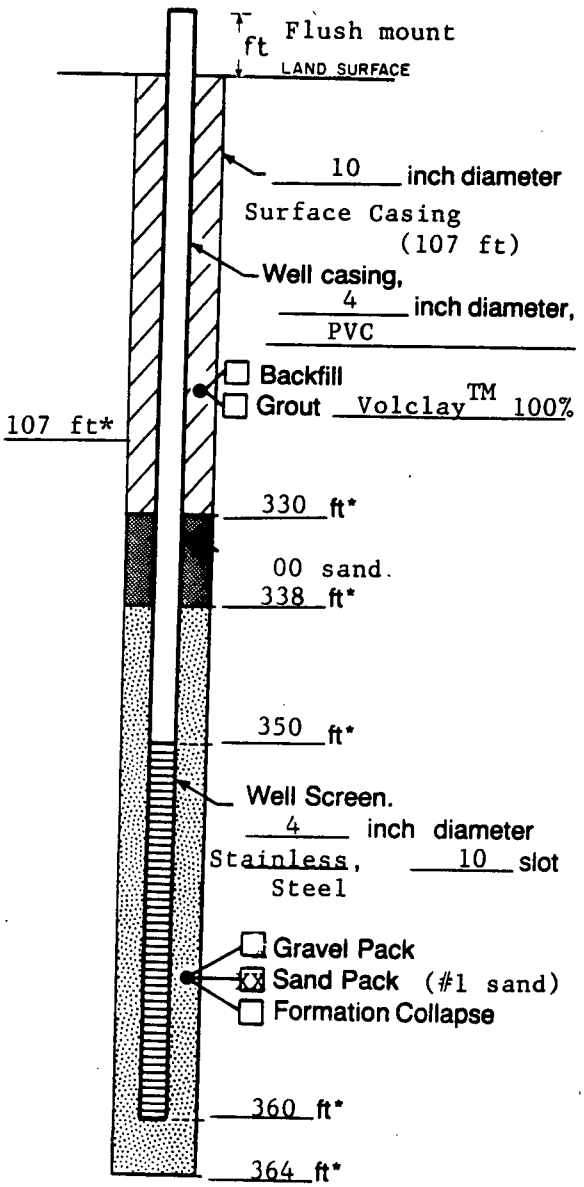
Fluid Loss During Drilling approx. 2,000 gal water gallons
Water Removed During Development 6,000 gallons
Static Depth to Water 109 feet below M.P.
Pumping Depth to Water _____ feet below M.P.
Pumping Duration 1.5 hours
Yield _____ gpm Date _____
Specific Capacity _____ gpm/ft
Well Purpose Monitoring

Remarks 6½ bags (100 lbs) of #1 sand
8 5-gal buckets of 00-sand
39 100-lb bags of volclay grout
* A 10-inch diameter steel surface casing was installed by the Barber Drilling Method to 119.5 ft. The mud rotary method was used to install the borehole to 473 ft followed by the reverse rotary method to the final depth.

Prepared by Michael Breault/Sarah Zagaja

GERAGHTY & MILLER, INC.
Environmental Services

WELL CONSTRUCTION LOG
(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project LKB/Syosset Landfill Well RW-12I

Town/City Syosset

County Nassau State New York

Permit No. _____

Land-Surface Elevation

and Datum _____ feet ☐ Surveyed

_____ ☐ Estimated

Installation Date(s) 10/6, 10/7, 1993

Drilling Method H.S.A./Cable Tool/Mud Rotary/Reverse Water

Drilling Contractor Delta Well & Pump Company, Inc.

Drilling Fluid mud, water (hydrant)

Development Technique(s) and Date(s)

Submersible pump - 10/14/93

Fluid Loss During Drilling 1,800 gallons

Water Removed During Development 7,000 gallons

Static Depth to Water 119.24 feet below M.P.

Pumping Depth to Water ** feet below M.P.

Pumping Duration 1.5 hours

Yield _____ gpm Date 10/14/93

Specific Capacity _____ gpm/ft

Well Purpose Monitoring

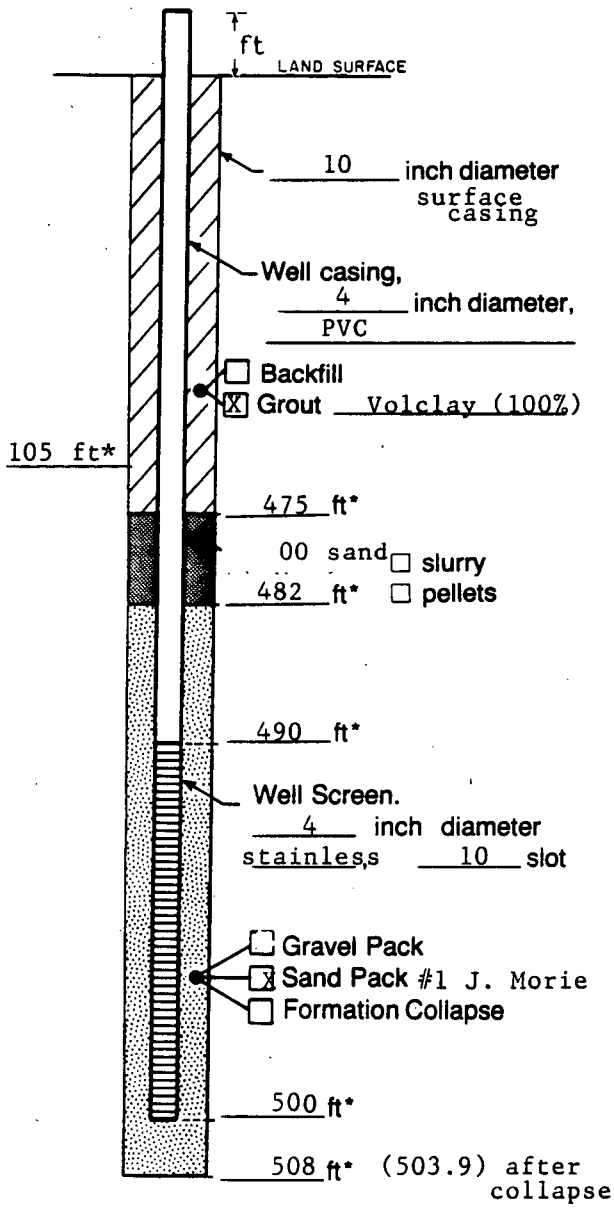
Remarks * 10-inch surface casing was installed to 107 ft by the hollow-stem auger and cable-tool drilling methods. The borehole was then advanced by the mud rotary method followed by the reverse rotary method for the final 30-ft.

** Water depth indicator could not reach the water table during pumping due to tangling with the pump and hose. Turbidity final 0.56 NTUs.

Prepared by David Vines

GERAGHTY & MILLER, INC.
Environmental Services

WELL CONSTRUCTION LOG
(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project LKB - Syosset Landfill Well RW-12D

Town/City Syosset

County Nassau State New York

Permit No. _____

Land-Surface Elevation

and Datum _____ feet ☐ Surveyed

_____ ☐ Estimated

Installation Date(s) 9/13, 9/24, 9/27/93

Drilling Method H.S.A./cable tool/mud rotary/reverse rotary

Drilling Contractor Delta Well & Pump

Drilling Fluid mud; water (potable hydrant)

Development Technique(s) and Date(s)
Submersible pump - 10/15/93

Fluid Loss During Drilling 2,100 gallons

Water Removed During Development 7,000 gallons

Static Depth to Water 118.36 feet below M.P.

Pumping Depth to Water ** feet below M.P.

Pumping Duration 1.5 hours

Yield _____ gpm Date 10/15/93

Specific Capacity _____ gpm/ft

Well Purpose Monitoring

Remarks 11 bags sand (#1)
30 gallons of 00 sand

* 10-inch diameter black steel surface casing was installed to 105 ft by the hollow-stem auger and cable-tool drilling methods. The borehole was then advanced by the mud rotary method followed by the reverse rotary method for the final 30 ft.

** Water depth indicator could not reach the water table during pumping due to tangling with the pump and hose Final turbidity = 24.7 NTUs.

Prepared by David Vines

APPENDIX G

ANALYTICAL RESULTS OF DEVELOPMENT WATER FROM MONITORING WELL PK-10D

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C930140/1 01/15/93

Geraghty & Miller, Incorporated
125 East Bethpage Road
Plainview, NY 11803
ATTN: Vincent Glasser

SOURCE OF SAMPLE: Syosset, Project No. NY02908
COLLECTED BY: Client DATE COL'D:01/12/93 RECEIVED:01/12/93

SAMPLE: Wastewater sample, PK-10D-Dev, 1300

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Bromomethane	ug/L	<1
Dichlordifluomethane	ug/L	<2
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Trichlorofluomethane	ug/L	<2
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
t 13 Dichloropropene	ug/L	<2
Trichloroethylene	ug/L	<1
Chlorodibromomethane	ug/L	<1
112 Trichloroethane	ug/L	<2
c 13 Dichloropropene	ug/L	<2
2chloroethvinylether	ug/L	<2
Bromoform	ug/L	<2
1122Tetrachloroethan	ug/L	<2
Tetrachloroethene	ug/L	<1

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/L	<1
1,3 Dichlorobenzene	ug/L	<2
1,2 Dichlorobenzene	ug/L	<2
1,4 Dichlorobenzene	ug/L	<2
Benzene	ug/L	<1
Toluene	ug/L	<2
Ethyl Benzene	ug/L	<1
m Xylene	ug/L	<2
o+p Xylene	ug/L	<4
Ammonia as N	mg/L	<0.05
Chloride as Cl	mg/L	15
Alkalinity tot CaCo3	mg/L	16
Hardness as CaC03	mg/L	7.4

cc:

REMARKS:

DIRECTOR _____

rn= 561 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C930140/2 01/15/93

Geraghty & Miller, Incorporated
125 East Bethpage Road
Plainview, NY 11803
ATTN: Vincent Glasser

SOURCE OF SAMPLE: Syosset, Project No. NY02908
COLLECTED BY: Client DATE COL'D:01/12/93 RECEIVED:01/12/93

SAMPLE: Wastewater sample, TB011293

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Bromomethane	ug/L	<1
Dichlordifluomethane	ug/L	<2
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Trichlorofluomethane	ug/L	<2
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
t 13 Dichloropropene	ug/L	<2
Trichloroethylene	ug/L	<1
Chlorodibromomethane	ug/L	<1
112 Trichloroethane	ug/L	<2
c 13 Dichloropropene	ug/L	<2
2chloroethvinylether	ug/L	<2
Bromoform	ug/L	<2
1122Tetrachloroethan	ug/L	<2
Tetrachloroethene	ug/L	<1

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/L	<1
1,3 Dichlorobenzene	ug/L	<2
1,2 Dichlorobenzene	ug/L	<2
1,4 Dichlorobenzene	ug/L	<2
Benzene	ug/L	<1
Toluene	ug/L	<2
Ethyl Benzene	ug/L	<1
m Xylene	ug/L	<2
o+p Xylene	ug/L	<4

cc:

REMARKS:

DIRECTOR

rn= 562 NYSDOH ID# 10320

APPENDIX H

WATER SAMPLING LOGS/CHAIN-OF-CUSTODY FORMS

FIRST GROUNDWATER SAMPLING ROUND

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-1 Coded/ Replicate No. MS/MSD Date 11/3/93

Weather overcast 40's Time Sampling Began 1336 Time Sampling Completed 1530

EVACUATION DATA

Description of Measuring Point (MP) TOC.

Height of MP Above/Below Land Surface 0.15' MP Elevation 194.52

Total Sounded Depth of Well Below MP 134.32 Water-Level Elevation 81.16

Held _____ Depth to Water Below MP 113.36 Diameter of Casing 2"

Wet _____ Water Column in Well 20.96 Gallons Pumped/Bailed Prior to Sampling 11 gal.

on: 1400
off: 1411

Gallons per Foot 0.16

Gallons in Well 3.35 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method 2" Sub. pump Q=1 gpm T=11 min

SAMPLING DATA/FIELD PARAMETERS

Color black/colorless/colorless Odor yes/none/none Appearance v. turbid/clear/clear Temperature 16/16/16 °C/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 280/275/260 pH 6.30/6.10/6.05

Sampling Method and Material Teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel DV, LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill, NY0029008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-1D Coded/ Replicate No. Date 11/4/93

Weather sunny 50s Time Sampling Began 940 Time Sampling Completed 1015

EVACUATION DATA

Description of Measuring Point (MP) MP on PVC cap

Height of MP Above/~~Below~~ Land Surface 2.31 MP Elevation 197.36

Total Sounded Depth of Well Below MP 192.00 Water-Level Elevation 81.39

Held _____ Depth to Water Below MP 115.97 Diameter of Casing 4"

Wet _____ Water Column in Well 76.03 Gallons Pumped/Bailed Prior to Sampling 149 gal.

on: 940 Gallons per Foot 0.65

off: 1002 Gallons in Well 49.42 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method perm. sub. pump Q=7 gpm T=22 min

SAMPLING DATA/FIELD PARAMETERS

Color orange/colorless/colorless Odor -/-/- Appearance turbid/sl. turbid/clear Temperature 15.5/17/17 °C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 1100/1100/1100 pH 5.85/5.75/5.8

Sampling Method and Material 3/4" teflon bailer w/ leader (vocs) Tap discharge (other parameters)

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel SW, CH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page ____ of ____

Site Location Syosset, NY

Site/Well No. SY-2R Coded/ Replicate No. ____ Date 11.2.93

Weather Sunny 50s Time Sampling Began 1310 Time Sampling Completed 1450

EVACUATION DATA

Description of Measuring Point (MP) MP on Top of PVC casing

Height of MP (Above/~~Below~~) Land Surface 1.95 MP Elevation 187.48

Total Sounded Depth of Well Below MP 150.00 Water-Level Elevation 81.31

Held ____ Depth to Water Below MP 106.17 Diameter of Casing 4"

Wet ____ Water Column in Well 43.83 Gallons Pumped/Bailed Prior to Sampling 84 gal.

on: 1:31
off: 2:29

Gallons per Foot 0.65

Gallons in Well 28.49 Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method perm. sub. pump Q = 1.5 gpm T = 58 min

SAMPLING DATA/FIELD PARAMETERS

Color yellowtint/colorless/clear Odor slight/slight/slight Appearance turbid/clear/clear Temperature 14/15/14 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 1050/1150/1000 pH 5.4/5.3/5.35

Sampling Method and Material 3/4" teflon bailer w/ leader (vacs) sample spigot for others

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks ____

Sampling Personnel GW/DV/LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill / NY0029008 Page 1 of 1

Site Location Syosset, New York

Site/Well No. SY-2D Coded/ Replicate No. _____ Date 11/2/93

Weather Sunny 50's Time Sampling Began 1455 Time Sampling Completed 1600

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface 2.18 MP Elevation 186.57

Total Sounded Depth of Well Below MP 215.80 Water-Level Elevation 80.96

Held _____ Depth to Water Below MP 105.61 Diameter of Casing 3"

Wet _____ Water Column in Well 109.39 Gallons Pumped/Bailed Prior to Sampling 122 gal

on: 3:10
off: 341

Gallons per Foot 0.37

Gallons in Well 40.48 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method sub. pump Q = 4 gpm T = 31 min

SAMPLING DATA/FIELD PARAMETERS

Color colorless/colorless/colorless Odor none/none/none Appearance clear/clear/clear Temperature 15.5/17/17 °C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 1000/470/475 pH 6.15/6.50/6.50

Sampling Method and Material teflon bailer

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel GW/DV/LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset landfill / NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-3 Coded/ Replicate No. Date 11.2.93

Weather 50's sunny Time Sampling Began 945 Time Sampling Completed 1210

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface 0.50 MP Elevation 191.38

Total Sounded Depth of Well Below MP 145.28 Water-Level Elevation 81.35

Held _____ Depth to Water Below MP 110.03 Diameter of Casing 2"

Wet _____ Water Column in Well 35.25 Gallons Pumped/Bailed Prior to Sampling 17 gal.

Gallons per Foot 0.16

Gallons in Well 5.64 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method Teflon bailer w/ leader

SAMPLING DATA/FIELD PARAMETERS

Color black/black/black Odor present/present/present Appearance very turbid/very turbid/very turbid Temperature 10/12/16.5/16 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 900/920/1300/1310 pH 6.8/6.8/6.8/6.8

Sampling Method and Material Teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel EW/DV/LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset landfill / NY0029.008 Page _____ of _____

Site Location Syosset, NY

Site/Well No. SY-3D Coded/ Replicate No. _____ Date 11/2/93

Weather sunny 50's Time Sampling Began 800 Time Sampling Completed 930

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface _____ MP Elevation 194.74

Total Sounded Depth of Well Below MP 197.35 Water-Level Elevation 80.69

Held _____ Depth to Water Below MP 114.05 Diameter of Casing 3"

Wet _____ Water Column in Well 83.30 Gallons Pumped/Bailed Prior to Sampling 93 gal

on: 8:21
off: 8:45

Gallons per Foot 0.37

Gallons in Well 30.82 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method 2" sub. pump Q=4 gpm T=24 min

SAMPLING DATA/FIELD PARAMETERS

Color yellow tint / yellow tint / yellow tint Odor slight / slight / slight Appearance sl. turbid / sl. turbid / sl. turbid Temperature 16 / 17 / 17 °C/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm 2400 / 2400 / 2300 pH 6.8 / 6.8 / 7.0

Sampling Method and Material teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M _____	Preservative
See COC		

Remarks _____

Sampling Personnel * Field blank done before this well *
GW / BV / LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill / NY0029.08 Page 1 of 1

Site Location Syosset NY

Site/Well No. SY-3DD Coded/ Replicate No. Date 11/1/93

Weather Overcast 40's Time Sampling Began 1335 Time Sampling Completed 1520

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 541.83 Water-Level Elevation _____

Held _____ Depth to Water Below MP 113.99 Diameter of Casing 2"

Wet _____ Water Column in Well 427.84 Gallons Pumped/Bailed Prior to Sampling 206 gal.

on: 145
off: 2:37

Gallons per Foot 0.16

Gallons in Well 68.45 Sampling Pump Intake Setting (feet below land surface) ~150

Evacuation Method 2" sub. pump Q=4 gpm T=52 min

SAMPLING DATA/FIELD PARAMETERS

Color clear/clear/clear Odor none/none/none Appearance clear/clear/clear Temperature 15/15/14 °C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm 18/18/33 pH 5.6/5.8/5.9

Sampling Method and Material Teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks *field blank done prior to SY3DD and after SY-9

Sampling Personnel _____

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-4 Coded/ Replicate No. Date 11·2·93

Weather clear 45° Time Sampling Began 8:40 Time Sampling Completed 1205

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/~~Below~~ Land Surface 0.20 MP Elevation 193.32

Total Sounded Depth of Well Below MP 150.00 Water-Level Elevation 81.87

Held _____ Depth to Water Below MP 111.45 Diameter of Casing 2"

Wet _____ Water Column in Well 38.55 Gallons Pumped/Bailed Prior to Sampling 19 gal

Gallons per Foot 0.16

Gallons in Well 6.17 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method teflon bailer

SAMPLING DATA/FIELD PARAMETERS

Color black/brown/brown Odor slight/slight/slight Appearance turbid/turbid/turbid Temperature 15/15/15.5 °C/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 1250/1300/1250 pH 7.1/6.45/6.56

Sampling Method and Material teflon bailer

Constituents Sampled	Container Description From Lab X or G&M ___	Preservative
See COC		

Remarks _____

Sampling Personnel GW/DV/LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill / NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-6 Coded/ Replicate No. Date 11/1/93 (attempted) 11/5/93 (done)

Weather overcast Time Sampling Began 800 Time Sampling Completed 1300

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface 0.10 MP Elevation 185.85

Total Sounded Depth of Well Below MP 138.00 Water-Level Elevation 81.53

Held _____ Depth to Water Below MP 104.32 Diameter of Casing 2"

Wet _____ Water Column in Well 33.68 Gallons Pumped/Bailed Prior to Sampling 17 gal.

Gallons per Foot 0.16

Gallons in Well 5.39 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method disposable bailer

SAMPLING DATA/FIELD PARAMETERS

Color black / brown / lt. brown / lt. brown Odor -/-/-/- Appearance turbid / turbid / turbid / sl. turbid Temperature 15.5 / 15 / 15 / 15 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 85 / 300 / 375 / 370 pH 8.25 / 6.63 / 6.24 / 6.27

Sampling Method and Material 3/4" teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel DW, GW, LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY 0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-6D Coded/ Replicate No. Date 11/1/93

Weather overcast 50's Time Sampling Began 0830 Time Sampling Completed 1125

EVACUATION DATA

Description of Measuring Point (MP) TOC (MP)

Height of MP ~~Above~~/Below Land Surface 0.30 MP Elevation 185.60

Total Sounded Depth of Well Below MP 205.80 Water-Level Elevation 81.55

Held _____ Depth to Water Below MP 104.05 Diameter of Casing 4"

Wet _____ Water Column in Well 100.95 Gallons Pumped/Bailed Prior to Sampling 197 gal.

on: 848
off: 856
on2: 959
off2: 1018

Gallons per Foot 0.65

Gallons in Well 65.62 Sampling Pump Intake Setting (feet below land surface)

Evacuation Method permanent submersible pump Q=8gpm T=27 min.

SAMPLING DATA/FIELD PARAMETERS

Color black/grey/clear Odor yes/yes/yes Appearance v.turbid/turbid/sl.turbid Temperature 13/15/15 °C/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 415/500/390 pH 5.70/5.4/5.50

Sampling Method and Material 3/4" teflon bailer w/ leader (VOC) Tap Discharge others

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel GW/DV/LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-7 Coded/ Replicate No. Date 11.4.93

Weather sunny 50's Time Sampling Began 1530 Time Sampling Completed 1610

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP ~~Above~~/Below Land Surface 0.25 MP Elevation 199.63

Total Sounded Depth of Well Below MP 139.40 Water-Level Elevation 83.92

Held ____ Depth to Water Below MP 115.71 Diameter of Casing 2"

Wet ____ Water Column in Well 23.69 Gallons Pumped/Bailed Prior to Sampling 12 gal

Gallons per Foot 0.16

Gallons in Well 3.80 Sampling Pump Intake Setting (feet below land surface)

Evacuation Method 2" PVC Bailer

SAMPLING DATA/FIELD PARAMETERS

Color black/black/black Odor yes/yes/yes Appearance turbid/turbid/turbid Temperature 15/15.5/15.5 °F/°C

Other (specific ion; OVA; HNU; etc.)

Specific Conductance, umhos/cm 650/1200/1150 pH 5.90/6.00/5.95

Sampling Method and Material 3/4" teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
see COC		

Remarks

Sampling Personnel * field blank done before sampling *
GW/DV/LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029,808 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-8 Coded/ Replicate No. Date 11.4.93

Weather 55° sunny Time Sampling Began 1030 Time Sampling Completed 1100

EVACUATION DATA

Description of Measuring Point (MP) MP on PVC casing

Height of MP ~~Above~~/~~Below~~ Land Surface 2.25 MP Elevation 195.84

Total Sounded Depth of Well Below MP 137.00 Water-Level Elevation 81.79

Held _____ Depth to Water Below MP 114.05 Diameter of Casing 4"

Wet _____ Water Column in Well 22.95 Gallons Pumped/Bailed Prior to Sampling 45 gallons

on: 1040
off: 10:47

Gallons per Foot 0.65

Gallons in Well 14.92 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method perm. sub pump Q= 7gpm T= 7 min

SAMPLING DATA/FIELD PARAMETERS

Color colorless/colorless/colorless Odor present/yes/yes Appearance clear/clear/clear Temperature 16/16/16 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 290/300/295 pH 5.55/5.50/5.55

Sampling Method and Material teflon bailer w/ leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel DV, LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-9 Coded/ Replicate No. Date 11/1/93

Weather Overcast 51 Time Sampling Began 800 Time Sampling Completed 935

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP ~~Above~~/Below Land Surface 0.70 MP Elevation 199.41

Total Sounded Depth of Well Below MP 118.60 Water-Level Elevation 82.64

Held ____ Depth to Water Below MP 116.77 Diameter of Casing 4"

Wet ____ Water Column in Well 1.83 ~~Gallons Pumped~~/Bailed Prior to Sampling 4gal

Gallons per Foot 0.65

Gallons in Well 1.19 Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method Teflon bailer w/ Teflon leader

SAMPLING DATA/FIELD PARAMETERS

Color grey black / grey black / grey black Odor strong/strong/strong Appearance turbid/turbid/turbid Temperature 13.5/14/14 °C

Other (specific ion; OVA; HNU; etc.) OVA: below background

Specific Conductance umhos/cm 310/410/420 pH 5.70/5.8/6

Sampling Method and Material teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks ____

Sampling Personnel DW, GW, LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. PK-10S Coded/ Replicate No. Date 11.4.93

Weather overcast 50's Time Sampling Began 1120 Time Sampling Completed 1230

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 149.87 Water-Level Elevation _____

Held _____ Depth to Water Below MP 108.41 Diameter of Casing 4"

Wet _____ Water Column in Well 41.46 Gallons Pumped/Bailed Prior to Sampling 81 gal.

on: 1138
off: 1147

Gallons per Foot 0.65

Gallons in Well 26.95 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method Sub. pump Q= 9gpm T= 9min

SAMPLING DATA/FIELD PARAMETERS

Color clear/yellow/sl. yellow tint/slight yellow tint Odor none/none/none/none Appearance ~~clear~~ turbid/sl. turbid/sl. turbid Temperature 14/14/13.5/13.5 ~~°F~~/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 185/205/205/190 pH 5.33/5.41/5.40/5.40

Sampling Method and Material teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel GW/DW/LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. LKB /Syosset Landfill NY0029.008 Page 1 of 1

Site Location Syosset, New York

Site/Well No. PK 10I Coded/ Replicate No. Rep 2 Date 11.4.93

Weather clear 55° Time Sampling Began 1:15 Time Sampling Completed 2:25

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 362.12 Water-Level Elevation _____

Held _____ Depth to Water Below MP 107.80 Diameter of Casing 4"

Wet _____ Water Column in Well 254.32 Gallons Pumped/Bailed Prior to Sampling 496 gallons

on: 1:31 Gallons per Foot 0.65

off: 2:13 Gallons in Well 165.31 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method 4" Sub. pump Q= 12 gpm T= 42 min

SAMPLING DATA/FIELD PARAMETERS

Color clear/clear/clear/clear Odor none/none/none/none Appearance clear/clear/clear/clear Temperature 15/16/16/15 °C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm 1450/1600/1700/1500 pH 6.15/6.15/6.21/6.36

Sampling Method and Material Teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel GW, DM

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page 1 of 1

Site Location Syosset, New York

Site/Well No. PE-10D Coded/ Replicate No. MS/MSD Date 11.4.93

Weather Sunny 40 Time Sampling Began 801 Time Sampling Completed 1122

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 499.13 Water-Level Elevation _____

Held _____ Depth to Water Below MP 108.41 Diameter of Casing 4"

Wet _____ Water Column in Well 390.72 Gallons Pumped/Bailed Prior to Sampling 762 gallons

on: 9:01
off: 10:00

Gallons per Foot 0.65

Gallons in Well 253.97 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method 4" sub. pump Q=13gpm T=59 min

SAMPLING DATA/FIELD PARAMETERS

Color clear/yellowish/clear Odor none/none/none Appearance slightly sl. turbid/sl. turbid/turbid Temperature 13.5/13/13.5 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 125/125/105/105 pH 5.8/5.82/5.5/5.5

Sampling Method and Material Teflon bailer w/ tefion leader

Constituents Sampled	Container Description From Lab 8 or G&M ____	Preservative

Remarks *field blank taken after sampling 10D*

Sampling Personnel GW/DV/LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. RB-11S Coded/ Replicate No. Date 11-3-94

Weather Overcast 40 Time Sampling Began 155 Time Sampling Completed 2:15

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 144.50 Water-Level Elevation _____

Held _____ Depth to Water Below MP 109.12 Diameter of Casing 4"

Wet _____ Water Column in Well 35.38 Gallons Pumped/Bailed Prior to Sampling 69 gal.

on: 208 Gallons per Foot 0.65

off: 2:14 Gallons in Well 23.00 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method 4" sub. pump Q= 12 gpm T= 6 min

SAMPLING DATA/FIELD PARAMETERS

Color yellow/yellow/slight tint/slight tint Odor none/none/none/none Appearance turbid/moderately turbid/slightly turbid/sl. turbid Temperature 14/14/14/14 °C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 75/65/65/65 pH 5.6/5.4/5.41/5.42

Sampling Method and Material Teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel LH, GW, DV

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page _____ of _____

Site Location Syosset, NY

Site/Well No. RB-11I Coded/Replicate No. Rep 1 Date 11/3/93

Weather overcast 40° Time Sampling Began 1015 Time Sampling Completed 1145

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 358.06 Water-Level Elevation _____

Held _____ Depth to Water Below MP 110.38 Diameter of Casing 4"

Wet _____ Water Column in Well 247.68 Gallons Pumped/Bailed Prior to Sampling 483 gal.

on: 1025
off: 1106

Gallons per Foot 0.65

Gallons in Well 160.99 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method 4" submersible pump Q= 12gpm T= 41 min

SAMPLING DATA/FIELD PARAMETERS

Color clear/clear/clear Odor none/none/none Appearance clear/clear/clear Temperature 13/12/12 °C/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 230/225/225 pH 5.4/4.79/4.78

Sampling Method and Material teflon bailer w/ leader

Constituents Sampled	Container Description From Lab A or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel GW/DN/LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. RB-11D Coded/ Replicate No. Date 11.3.93

Weather overcast 50's Time Sampling Began 800 Time Sampling Completed 1010

EVACUATION DATA

Description of Measuring Point (MP) TOP of PVC casing

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 503.50 Water-Level Elevation _____

Held _____ Depth to Water Below MP 111.97 Diameter of Casing 4"

Wet _____ Water Column in Well 391.53 Gallons Pumped/Bailed Prior to Sampling 764 gal.

on: 826
off: 930

Gallons per Foot 0.65

Gallons in Well 254.50 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method 4" sub. pump Q= 12gpm T= 64min

SAMPLING DATA/FIELD PARAMETERS

Color colorless / colorless / colorless Odor none/none/none Appearance clear/clear/clear Temperature 13/12.5/13 ~~°F~~ °C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm 15/15/15 pH 5.10/5.3/5.7

Sampling Method and Material teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks *COM split samples on this well

Sampling Personnel DV, GW, LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029008 Page 1 of

Site Location Syosset, NY

Site/Well No. RW-12I Coded/Replicate No. Rep 3 Date 11.5.93

Weather rain 60's Time Sampling Began 1030 Time Sampling Completed 1210

EVACUATION DATA

Description of Measuring Point (MP) Top of PVC casing

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 361.07 Water-Level Elevation _____

Held _____ Depth to Water Below MP 117.84 Diameter of Casing 4"

Wet _____ Water Column in Well 243.23 Gallons Pumped/Bailed Prior to Sampling 475 gal

on: 1050
off: 1142

Gallons per Foot 0.65

Gallons in Well 158.10 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method 4" sub. pump Q= 9 gpm T=52 min

SAMPLING DATA/FIELD PARAMETERS

Color colorless / yellow tint / colorless / colorless Odor NONE / - / - / - Appearance clear / turbid / clear / clear Temperature 15.5/15/15/15 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 500/500/500/500 pH 6.35/6.2/6.2/6.4

Sampling Method and Material teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M	Preservative
See COC		

Remarks *field blank taken before sampling 12I + after RW-12D*

Sampling Personnel LH, DV, GW

WELL CASING VOLUMES

GAL./FT.								
	1-¼"	= 0.06	2"	= 0.16	3"	= 0.37	4"	= 0.65
	1-½"	= 0.09	2-½"	= 0.26	3-½"	= 0.50	6"	= 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Land fill NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. RW-12D Coded/ Replicate No. Date 11.5.93

Weather rainy 60's Time Sampling Began 800 Time Sampling Completed 1045

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 500.74 Water-Level Elevation _____

Held _____ Depth to Water Below MP 117.98 Diameter of Casing 4"

Wet _____ Water Column in Well 382.76 Gallons Pumped/Bailed Prior to Sampling 747 gallons

on: 915
off: 1017

Gallons per Foot 0.65

Gallons in Well 248.80 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method 4" sub. pump Q= 12 gpm T= 63 min

SAMPLING DATA/FIELD PARAMETERS

Color ~~(color less / color less / color less / color less)~~ Odor none/none/none/none Appearance ~~clear / clear / clear / clear~~ Temperature 15/15/14/15 ~~°F~~ °C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 420/400/425/440 pH 5.9/5.7/5.7/5.7

Sampling Method and Material Teflon bailer w/ Teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks *field blank done after sampling 12D and before 12I

Sampling Personnel LH, GW, DV

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

Laboratory Task Order No. 0101

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number 116/Syosset Landfill No. 029008

Project Location Syosset, New York

Laboratory ITA Labs Inc.

Sampler(s)/Affiliation B. Williams
L. Hendricks

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION: 40 ml. vials VOCs 524.2 (~HCl)	* Dissolved Metals 1 Liter Plastic (~HNO3)	1 Liter Plastic Total Metals (~HNO3)	1 Liter Plastic Wet Chemistry (none)	500 ml. Plastic Ammonia (~H2SO4)				TOTAL
TB112993	L	11/29/93		3								3
FB112193	L	11/29/93		3	1	1	1	1				7
SY-1	L	11/29/93		3	1	1	1	1				7
SY-6L	L	11/29/93		3	1	1	1	1				7
SY-SOIL	L	11/29/93		3	1	1	1	1				7

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 31

Relinquished by: Richard Hendricks	Organization: Geraghty + Miller, Inc.	Date 11/29/93	Time 5:00 pm	Seal Intact? Yes No N/A
Received by:	Organization:			
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:			

Special Instructions/Remarks:

* Dissolved Metals filtered in the field through a 0.45 µm filters *

Delivery Method: ☐ In Person ☐ Common Carrier _____ SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY

GAM Form 09-1.00

GERAGHTY & MILLER, INC.
Environmental Services

Laboratory Task Order No. 06161

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number Lipsett Landfill / NY0029008

Project Location Dilsset, New York

Laboratory TEH Lab Inc.

Sampler(s)/Affiliation G. Williams, D. McGregor, L. Hendricks

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION: 40 ml glass vials vols 524.2 (w/ HCl)	1 Liter plastic * Dissolved Metals (w/ HNO3)	1 Liter plastic Total Metals (w/ HNO3)	1 Liter plastic Wet Chemistry (UNP)	500 ml plastic Ammonia (w/ H2SO4)				TOTAL
SG-1 **	L	11.30.93		9	3	3	3	3				21
RB-11S	L	11.30.93		3	1	1	1	1				7
RB-11I	L	11.30.93		3	1	1	1	1				7
RB-11d	L	11.30.93		3	1	1	1	1				7
TB 113093	L	11.30.93		3								3
FB 113093	L	11.30.93		3	1	1						5
Rep 1	L	11.30.93		3	1	1	1	1				7

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 57

Relinquished by: Laura Andrews Organization: Geraghty & Miller Date 11/30/93 Time ____ Seal Intact? Yes No N/A

Received by: ____ Organization: ____

Relinquished by: ____ Organization: ____ Date ____ Time ____ Seal Intact? Yes No N/A

Received by: ____ Organization: ____

Special Instructions/Remarks:

** Please use this sample for matrix spike / matrix spike duplicate

* Dissolved Metals were field filtered through 0.45 micron filters.

Delivery Method: ☐ In Person ☒ Common Carrier Federal Ex ☐ Lab Courier ☐ Other ____

G&M Form 09.1.90

GERAGHTY & MILLER, INC.
Environmental Services

Laboratory Task Order No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number Syosset Landfill N40029008

Project Location Syosset, NY

Laboratory TEH, Labs Inc.

Sampler(s)/Affiliation D. McGregor
G. Williams

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	1-liter plastic dissolved metals (HNO3)	1-liter plastic Total Metals Hardness (HNO3)	1-liter plastic Wet chemistry	1-500ml plastic Ammonia (H2SO4)						TOTAL
PK-10I	L	12-1-93		1	1	1	1						4
Rep-2	L			1	1	1	1						4
PK-10D	L			1	1	1	1						4
* PK-10D Matrix Spike	L			1	1	1	1						4
* PK-10D matrix spike dup	L			1	1	1	1						4

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 20

Relinquished by: Dan McGregor Organization: Geraghty & Miller Date 12/1/93 Time 6:15pm
Received by: _____ Organization: _____

Seal Intact? Yes No N/A

Relinquished by: _____ Organization: _____
Received by: _____ Organization: _____ Date / / Time _____

Seal Intact? Yes No N/A

Special Instructions/Remarks: Dissolved Metals filtered through 0.45 um filter.
* PLEASE ANALYSE MATRIX SPIKE AND MATRIX SPIKE DUPLICATE from THESE SAMPLES

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

G&M Form 09 1-90

GERAGHTY & MILLER, INC.
Environmental Services

Laboratory Task Order No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number: Syosset Landfill NY0029008
Project Location: Syosset, NY
Laboratory: IEA, Labs Inc.
Sampler(s)/Affiliation: D. McGregor, G. Williams

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION: 1-liter plastic dissolved metals (HNO3)	1-liter plastic total metals + hardness (HNO3)	1-liter plastic Inlet Chemistry	1-500ml plastic Ammonia (H2SO4)	1-40ml vial VOA 624.2 (HCl)					TOTAL
FB 12-1-93	L	12-1-93		1	1			3					5
PK-10S	L	12-1-93		1	1	1	1	3					7
SY-8	L	12-1-93		1	1	1	1	3					7
SY-10	L	12-1-93		1	1	1	1	3					7
TB 12-1-93	L	12-1-93						3					3
PK-10I	L							3					3
Rep-2	L							3					3
PK-10D	L							3					3
PK-10D matrix spike	L							3					3
PK-10D matrix spike dup	L	↓						3					3

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 44

Relinquished by: [signature] Organization: Geraghty & Miller
Received by: _____ Organization: _____ Date 12/1/93 Time 6:15 pm Seal Intact? (Yes) No N/A

Relinquished by: _____ Organization: _____
Received by: _____ Organization: _____ Date / / Time _____ Seal Intact? Yes No N/A

Special Instructions/Remarks: Dissolved metals filtered through a 0.45 um filter

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

G&M Form 09-1.90

GERAGHTY & MILLER, INC.
Environmental Services

Laboratory Task Order No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number Onondaga Hill NY4002908

Project Location Jyracuse, NY

Laboratory TEM Lab, Inc (Monroe)

Sampler(s)/Affiliation Derek McGregor
Gary Williams

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION: 1-Liter plastic Dissolved metals (HNO3)	1-Liter plastic Total Metals/Cyanide (HNO3)	1-Liter plastic Wet Chemistry	1-500 ml plastic Ammonia (H2SO4)	1-40 ml vial VOA VOCs 8240.2 (HCl)	TOTAL
FB 12-2-93	L	12-2-93		1	1			3	5
KW-12I	L	12-2-93		1	1	1	1	3	7
KW-12D	L	12-2-93		1	1	1	1	3	7
Rep-2	L	12-2-93		1	1	1	1	3	7
SY-6	L	12-2-93		1	1	1	1	3	7
SY-7	L	12-2-93		1	1	1	1	3	7
TB 12-2-93	L	12-2-93						3	3

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 43

Relinquished by: Derek McGregor Organization: Geraghty & Miller
Received by: _____ Organization: _____ Date 12/2/93 Time 6:00pm Seal Intact? (Yes) No N/A

Relinquished by: _____ Organization: _____
Received by: _____ Organization: _____ Date / / Time _____ Seal Intact? Yes No N/A

Special Instructions/Remarks: Dissolved metals filtered through 0.45 um filters

Delivery Method: ☐ In Person ☒ Common Carrier F.E.E. (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

G&M Form 09 1-90

SECOND GROUNDWATER SAMPLING ROUND

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset landfill NY0029,008 Page 1 of

Site Location Syosset, New York

Site/Well No. SY-1 Coded/ Replicate No. MS/MSD Date 11/30/93

Weather clear, 40's Time Sampling Began 2:20 Time Sampling Completed 4:20

EVACUATION DATA

Description of Measuring Point (MP) T.O.C.

Height of MP Above/~~Below~~ Land Surface 0.15 MP Elevation 194.52

Total Sounded Depth of Well Below MP 134.30 Water-Level Elevation 81.03

Held _____ Depth to Water Below MP 113.49 Diameter of Casing 2"

Wet _____ Water Column in Well 20.81 Gallons Pumped/Bailed Prior to Sampling 10 gallons

on: 2:50
off: 3:00

Gallons per Foot 0.16

Gallons in Well 3.33 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method 2" sub. pump Q=1gpm T= 10 min

SAMPLING DATA/FIELD PARAMETERS

Color green tint/clear/clear/clear Odor present/present/slight/slight Appearance ~~mildly~~ turbid/clear/clear/clear Temperature 14/15/15.5/16/16 °F/~~°C~~

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm 270/270/260/260/260 pH 6.6/6.1/5.9/5.9/6.0

Sampling Method and Material Teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See C.O.C.		

Remarks _____

Sampling Personnel G.W/L.H.

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.808 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-1D Coded/ Replicate No. Date 12/1/93

Weather Overcast 35° Time Sampling Began 4:10 Time Sampling Completed 5:01

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface 2.31 MP Elevation 197.36

Total Sounded Depth of Well Below MP 192.00 Water-Level Elevation 81.28

Held _____ Depth to Water Below MP 116.08 Diameter of Casing 4"

Wet _____ Water Column in Well 75.92 Gallons Pumped/Bailed Prior to Sampling 148.04

On: 4:15 Gallons per Foot 0.65

Off: 4:45 Gallons in Well 49.34 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method dedicated sub. pump Q=5 gpm T= 30 min.

SAMPLING DATA/FIELD PARAMETERS

Color none/same/same/same Odor slight/slight/slight/slight Appearance sl. turbid/sl. turbid/sl. turbid/sl. turbid Temperature 16/16/17/17 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 105/100/105/105 pH 5.9/5.8/5.8/5.8

Sampling Method and Material _____

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel G.W / D.McG

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029,008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-2R Coded/ Replicate No. Date 12.3.93

Weather clear 40's Time Sampling Began 10:25 Time Sampling Completed 11:30

EVACUATION DATA

Description of Measuring Point (MP) T.O.C.

Height of MP Above/Below Land Surface 1.95 MP Elevation 187.48

Total Sounded Depth of Well Below MP 150.00 Water-Level Elevation 81.25

Held _____ Depth to Water Below MP 106.23 Diameter of Casing 4"

Wet _____ Water Column in Well 43.77 Gallons Pumped/Bailed Prior to Sampling 85.35

on: 10:38 Gallons per Foot 0.65

off: 11:21 Gallons in Well 28.45 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method dedicated 4" sub. pump Q=2gpm T=43 min. well sursing

SAMPLING DATA/FIELD PARAMETERS

Color clear/clear/clear Odor none/none/none Appearance clear/clear/clear Temperature 15/15/15 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm 900/1100/1100 pH 5.2/5.2/5.2

Sampling Method and Material _____

Constituents Sampled	Container Description From Lab ____ or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel GW, D.McG.

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset landfill, NY0029.08 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-2D Coded/ Replicate No. Date 12.3.93

Weather clear 45° Time Sampling Began 10:25am Time Sampling Completed 1:30 pm

EVACUATION DATA

Description of Measuring Point (MP) TOC.

Height of MP Above/Below Land Surface 2.18 MP Elevation 186.57

Total Sounded Depth of Well Below MP 201.48 Water-Level Elevation

Held ____ Depth to Water Below MP 105.64 Diameter of Casing 3"

Wet ____ Water Column in Well 95.84 Gallons Pumped/Bailed Prior to Sampling 106.38

on: 11:58am Gallons per Foot 0.37

off: 12:51 Gallons in Well 35.46 Sampling Pump Intake Setting (feet below land surface)

Evacuation Method 2" sub. pump. Q = 2gpm T = 53 ✓ xsct at 120 - dry - reset 130ft bmp.

SAMPLING DATA/FIELD PARAMETERS

Color colorless/colorless/colorless/colorless Odor none/none/none/none Appearance clear/clear/clear/clear Temperature 16/17/17/17 °C/°C

Other (specific ion; OVA; HNU; etc.)

Specific Conductance umhos/cm 430/445/410/425 pH 6.4/6.5/6.6/6.6

Sampling Method and Material Teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See C.O.C		

Remarks

Sampling Personnel GW, DMcG

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-3 Coded/ Replicate No. Date 12.3.93

Weather Clear 45 Time Sampling Began 3:20 Time Sampling Completed 5:05

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface 0.50 MP Elevation 191.38

Total Sounded Depth of Well Below MP 145.20 Water-Level Elevation 81.25

Held _____ Depth to Water Below MP 110.13 Diameter of Casing 2"

Wet _____ Water Column in Well 35.07 Gallons Pumped/Bailed Prior to Sampling 16.83

Gallons per Foot 0.16

Gallons in Well 5.61 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method Teflon bailer w/ teflon leader

SAMPLING DATA/FIELD PARAMETERS

Color greenish/greenish/grey/grey Odor slight/slight/slight/slight Appearance clear/sl. turbid/turbid/sl. turbid Temperature 17.5/17.5/17.5/17.5 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm 1150/1100/1400/1400 pH 7.0/6.9/6.8/6.8

Sampling Method and Material Teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M	Preservative
See C.O.C.		

Remarks _____

Sampling Personnel G.W. DMcG.

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.098 Page ____ of ____

Site Location Syosset, NY

Site/Well No. SY-3D Coded/ Replicate No. ____ Date 12.3.93

Weather Overcast 45° Time Sampling Began 2:20 Time Sampling Completed 3:15

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface ____ MP Elevation 194.74

Total Sounded Depth of Well Below MP 197.35 Water-Level Elevation 80.62

Held ____ Depth to Water Below MP 114.12 Diameter of Casing 3"

Wet ____ Water Column in Well 83.23 Gallons Pumped/Bailed Prior to Sampling 92.38

on: 2:31
off: 3:01

Gallons per Foot 0.37

Gallons in Well 30.79 Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method 2" Sub. pump Q=3 gpm T=31 min

SAMPLING DATA/FIELD PARAMETERS

Color green/green tint/brown tint/green tint Odor slight/slight/slight/slight Appearance clear/clear/clear/clear Temperature 9/20/9/9 9°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance umhos/cm 2550/2600/2600/2600 pH 7.0/6.9/7.0/7.1

Sampling Method and Material Teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks * field blank taken before SY-3D was sampled

Sampling Personnel GW, DMcG

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.08 Page ____ of ____

Site Location Syosset, NY

Site/Well No. SY-3DD Coded/ Replicate No. ____ Date 11/29/93

Weather Clear, 40's Time Sampling Began 2:15 Time Sampling Completed 4:10

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 541.77 Water-Level Elevation ____

Held ____ Depth to Water Below MP 113.97 Diameter of Casing 2"

Wet ____ Water Column in Well 427.80 Gallons Pumped/Bailed Prior to Sampling 205 gallons

on: 2:32
off: 3:41

Gallons per Foot 0.16

Gallons in Well 68.45 Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method 2" sub. pump Q=3 gpm T= 69 min

SAMPLING DATA/FIELD PARAMETERS

Color clear/clear/clear/clear Odor none/none/none/none Appearance clear/clear/clear/clear Temperature 19/16/15/15/15 °C/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 28/20/20/20 pH 5.7/5.8/5.8/5.8

Sampling Method and Material Teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks ____

Sampling Personnel LH BW

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-4 Coded/ Replicate No. Date 12.3.93

Weather Cloudy 45° Time Sampling Began 7:50 Time Sampling Completed 10:10

EVACUATION DATA

Description of Measuring Point (MP)

Height of MP Above/Below Land Surface 0.20 MP Elevation 193.32

Total Sounded Depth of Well Below MP 150.55 Water-Level Elevation 81.71

Held ____ Depth to Water Below MP 111.61 Diameter of Casing 2"

Wet ____ Water Column in Well 38.94 Gallons Pumped/Bailed Prior to Sampling 18.60 gal

Gallons per Foot 0.16

Gallons in Well 6.20 Sampling Pump Intake Setting (feet below land surface)

Evacuation Method Teflon bailer w/ teflon leader

SAMPLING DATA/FIELD PARAMETERS

Color dk grey/dk. grey/lt. grey/light brown Odor moderate/moderate/moderate/moderate Appearance turbid/turbid/turbid/turbid Temperature 15/15/15/15 °F/°C

Other (specific ion; OVA; HNU; etc.)

Specific Conductance umhos/cm 1100/1150/1150/1100 pH 7.5/7.1/7.0/7.0

Sampling Method and Material Teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks

Sampling Personnel GW, DMcG

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page _____ of _____

Site Location Syosset, NY

Site/Well No. SY-6 Coded/ Replicate No. _____ Date 12.2.93

Weather Overcast 40s Time Sampling Began 10:10 Time Sampling Completed 12:15

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface 0.10 MP Elevation 185.85

Total Sounded Depth of Well Below MP 138.00 Water-Level Elevation 81.36

Held _____ Depth to Water Below MP 104.49 Diameter of Casing 2"

Wet _____ Water Column in Well 33.51 Gallons Pumped/Bailed Prior to Sampling 16.08

Gallons per Foot 0.16

Gallons in Well 5.36 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method disp. bailer Q= - T= -

SAMPLING DATA/FIELD PARAMETERS

Color brown/brown/brown tint/brown tint Odor slight/slight/slight/slight Appearance turbid/turbid/sl. turbid/sl. turbid Temperature 14/14/14.5/14 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 285/350/360/360 pH 7.35/6.95/6.7/6.65/~~6.65~~

Sampling Method and Material teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ___	Preservative
see COC		

Remarks _____

Sampling Personnel GW, DMcG

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset landfill NY0029998 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-6D Coded/ Replicate No. Date 11-29-93

Weather clear 50's Time Sampling Began 11:00 Time Sampling Completed 1:15

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface 0.30 MP Elevation 185.60

Total Sounded Depth of Well Below MP 205.00 Water-Level Elevation 81.12

Held _____ Depth to Water Below MP 104.48 Diameter of Casing 4"

Wet _____ Water Column in Well 100.52 Gallons Pumped/Bailed Prior to Sampling 196 gal.

on: 11:20
off: 12:00

Gallons per Foot 0.65

Gallons in Well 65.30 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method perm. pump Q=5gpm T=40min

SAMPLING DATA/FIELD PARAMETERS

Color clear/clear/clear/clear Odor slight/slight/slight/slight Appearance clear/clear/clear/clear Temperature 15/15.5/15.5/16 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm 275/310/355/355 pH 6.1/5.9/5.7/5.7

Sampling Method and Material _____

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks * field blank taken prior to sampling SY-6D

Sampling Personnel _____

WELL CASING VOLUMES

GAL./FT.				
1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.088 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-7 Coded/ Replicate No. _____ Date 12.2.93

Weather Overcast 40's Time Sampling Began 2:30 Time Sampling Completed 4:00

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface 0.25 MP Elevation 199.63

Total Sounded Depth of Well Below MP 127.49 Water-Level Elevation 84 –

Held _____ Depth to Water Below MP 115.63 Diameter of Casing 2"

Wet _____ Water Column in Well 11.86 Gallons Pumped/Bailed Prior to Sampling 5.69

Gallons per Foot 0.16

Gallons in Well 1.89 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method 1" PVC bailer

SAMPLING DATA/FIELD PARAMETERS

Color black/black/black Odor slight/slight/slight Appearance turbid/turbid/turbid Temperature 15/15/15.5 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 1250/1300/1300 pH 6.1/6.1/6.2

Sampling Method and Material 3/4" teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel GW/D.McG

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. SY-8 Coded/ Replicate No. Date 12·1·93

Weather Overcast 50 Time Sampling Began 3:05 Time Sampling Completed 4:06

EVACUATION DATA

Description of Measuring Point (MP) MP on PVC Cap

Height of MP Above/Below Land Surface 2.25 MP Elevation 195.84

Total Sounded Depth of Well Below MP 137.00 Water-Level Elevation 81.67

Held ____ Depth to Water Below MP 114.17 Diameter of Casing 4"

Wet ____ Water Column in Well 22.83 Gallons Pumped/Bailed Prior to Sampling 44.49

on: 3:16 Gallons per Foot 0.65

off: 3:23 Gallons in Well 14.83 Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method ded. sub. pump Q=7gpm T=7min

SAMPLING DATA/FIELD PARAMETERS

Color clear/clear/clear Odor slight/slight/slight Appearance clear/clear/clear Temperature 5/15/15 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance umhos/cm 295/295/295 pH 5.6/5.6/5.6

Sampling Method and Material sample spigot except for VOC (teflon bailer)

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks ____

Sampling Personnel GW, DMCG

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.088 Page _____ of _____

Site Location Syosset, NY

Site/Well No. SY-9 Coded/ Replicate No. _____ Date 11/29/93

Weather Clear, 40's Time Sampling Began 9:30 Time Sampling Completed 10:40

EVACUATION DATA

Description of Measuring Point (MP) T.O.C.

Height of MP Above/Below Land Surface 0.70 MP Elevation 199.41

Total Sounded Depth of Well Below MP 118.50 Water-Level Elevation 82.41

Held _____ Depth to Water Below MP 117.00 Diameter of Casing 4"

Wet _____ Water Column in Well 1.50 Gallons Pumped/Bailed Prior to Sampling 3 gallons

Gallons per Foot 0.65

Gallons in Well 0.975 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method Teflon bailer w/ teflon leader

SAMPLING DATA/FIELD PARAMETERS

Color grey/grey/grey Odor strong/moderate/moderate Appearance turbid/turbid/turbid Temperature 15.5/15/15/15 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 385/385/370/370 pH 5.8/5.8/5.7/5.7

Sampling Method and Material teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel GW, LH

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset landfill NY0029.008 Page _____ of _____

Site Location Syosset, NY

Site/Well No. PE-10S Coded/ Replicate No. _____ Date 12·1·93

Weather Sunny 40 Time Sampling Began 9:30 Time Sampling Completed 12:05

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 149.90 Water-Level Elevation _____

Held _____ Depth to Water Below MP 108.49 Diameter of Casing 4"

Wet _____ Water Column in Well 41.41 Gallons Pumped/Bailed Prior to Sampling 135 gal.

on: 10:45
off: 11:15

Gallons per Foot 0.65

Gallons in Well 26.90 Sampling Pump Intake Setting (feet below land surface) 123 ft. bmp

Evacuation Method 4" Sub. pump Q = 4.5 gpm T = 20 min

SAMPLING DATA/FIELD PARAMETERS

Color yellowish/yellowish/yellowish/yellowish Odor none/none/none/none Appearance cloudy/cloudy/cloudy/cloudy Temperature 13/13/13/13 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 185/190/188/187 pH 5.7/5.8/5.9/5.9

Sampling Method and Material teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel GW, DMCG

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.088 Page ____ of ____

Site Location Syosset, NY

Site/Well No. PK-10I Coded/ Replicate No. Rep-2 Date 12.1.93

Weather Clear 50's Time Sampling Began 12:15 Time Sampling Completed 1:45

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 362.19 Water-Level Elevation ____

Held ____ Depth to Water Below MP 107.87 Diameter of Casing 4"

Wet ____ Water Column in Well 254.32 Gallons Pumped/Bailed Prior to Sampling 495 gal.

on: 12:31 Gallons per Foot 0.65

off: 1:12 Gallons in Well 165.30 Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method 4" Sub. pump Q=12 T=41

SAMPLING DATA/FIELD PARAMETERS

Color clear/clear/clear/clear Odor slight/slight/slight/slight Appearance bubbly clear/bubbly clear/bubbly clear/bubbly clear Temperature 14/15/15/14.5 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance umhos/cm 1500/1500/1600/1550 pH 6.5/6.5/6.6/6.6

Sampling Method and Material Teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks * field blank taken after PK10S before PK 10I

Sampling Personnel GW, DMcB

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. PK-10D Coded/ Replicate No. MS/MSD Date 12.1.93

Weather sunny 40's Time Sampling Began 8am Time Sampling Completed 11:15

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 499.68 Water-Level Elevation _____

Held _____ Depth to Water Below MP 108.38 Diameter of Casing 4"

Wet _____ Water Column in Well 391.30 Gallons Pumped/Bailed Prior to Sampling 960

on: 8:55 Gallons per Foot 0.65 120 dried in 5 min

off: 10:15 Gallons in Well 25.43 Sampling Pump Intake Setting (feet below land surface) set at 135

Evacuation Method 4" Sub. pump Q = 12gpm T = 63min

SAMPLING DATA/FIELD PARAMETERS

Color colorless/colorless/colorless/colorless Odor none/none/none/none Appearance slightly cloudy/"/"/" Temperature 13/12/12/12.5 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm 92/112/90/85 pH 6.0/6.3/6.1/6.1

Sampling Method and Material _____

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
See COC		

Remarks _____

Sampling Personnel GW, DMcG

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill / NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. RB-1S Coded/ Replicate No. Date 11/30/93

Weather 40's clear Time Sampling Began 10:30 Time Sampling Completed 3:00

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 144.49 Water-Level Elevation _____

Held _____ Depth to Water Below MP 109.38 Diameter of Casing 4"

Wet _____ Water Column in Well 35.11 Gallons Pumped/Bailed Prior to Sampling 69 gal.

on: 1:56 Gallons per Foot 0.65

off: 2:00 Gallons in Well 22.82 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method 4" submersible pump Q=7 gpm T=10 min

SAMPLING DATA/FIELD PARAMETERS

Color orang/none/none/none Odor none/none/none/none Appearance v. turbid ↑ 3"/1"/.. Temperature 14/14/14/14 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm 58/57/55/56 pH 5.16/5.23/5.27/5.25

Sampling Method and Material teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M ____	Preservative
see COC		

Remarks _____

Sampling Personnel GW, DMcG

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. RB-11I Coded/ Replicate No. Rep-1 Date 11.30.93

Weather Clear 40 Time Sampling Began 8:00 Time Sampling Completed 12:00

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 358.07 Water-Level Elevation _____

Held _____ Depth to Water Below MP 110.45 Diameter of Casing 4"

Wet _____ Water Column in Well 247.62 Gallons Pumped/Bailed Prior to Sampling 483 gallons

on: 10:18
off: 11:19

Gallons per Foot 0.65

Gallons in Well 160.95 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method 4" Sub. pump Q = 8 gpm T = 61 min

SAMPLING DATA/FIELD PARAMETERS

Color clear/clear/clear Odor none/none/none Appearance clear/clear/clear Temperature 10.5/11/10/10 °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 210/210/208/210 pH 5.0/5.2/5.2/5.2

Sampling Method and Material Teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab ✓ or G&M ____	Preservative
See COC		

Remarks * field blank taken b/f sampling

Sampling Personnel LH, DMcG, GW

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page ____ of ____

Site Location Syosset, NY

Site/Well No. RB-11D Coded/ Replicate No. ____ Date 11.30.93

Weather clear 40's Time Sampling Began 7:15 Time Sampling Completed 10:15

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 503.49 Water-Level Elevation ____

Held ____ Depth to Water Below MP 110.95 Diameter of Casing 4"

Wet ____ Water Column in Well 392.54 Gallons Pumped/Bailed Prior to Sampling 766 gal.

on: 8:24
off: 9:26

Gallons per Foot 0.65

Gallons in Well 255.15 Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method 4" Sub. pump Q = 12gpm T = 64 min

SAMPLING DATA/FIELD PARAMETERS

Color clear/clear/clear/clear Odor none/none/none/none Appearance clear/clear/clear/clear Temperature 11.5/10/10/11 °C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance umhos/cm 15/15/15/15 pH 6.4/5.1/5.2/5.2

Sampling Method and Material ____

Constituents Sampled	Container Description From Lab ✓ or G&M ____	Preservative
See COC		

Remarks ____

Sampling Personnel LH, DMcG, GW

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY~~028~~ 0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. RW-12I Coded/ Replicate No. Rep-3 Date 12.2.93

Weather Overcast 40 Time Sampling Began 8:15 Time Sampling Completed 12:30

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 360.34 Water-Level Elevation _____

Held _____ Depth to Water Below MP 117.87 Diameter of Casing _____

Wet _____ Water Column in Well 242.47 Gallons Pumped/Bailed Prior to Sampling 472.81

on: 10:55
off: 11:44

Gallons per Foot 0.65

Gallons in Well 157.60 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method 4" Sub. pump Q = 10gpm T= 49min

SAMPLING DATA/FIELD PARAMETERS

Color ~~colorless~~ colorless / colorless / colorless Odor ~~none~~ none / none / none Appearance ~~sl. turbid~~ sl. turbid / sl. turbid / sl. turbid Temperature 13/13/13/13 °C TOC

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance umhos/cm 500/505/500/500 pH 6.3/6.3/6.4/6.3

Sampling Method and Material teflon bailer w/ teflon leader

Constituents Sampled	Container Description From Lab X or G&M	Preservative
Sel TOC		

Remarks _____

Sampling Personnel GW, D. McG

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	1-½" = 0.09	2" = 0.16	2-½" = 0.26	3" = 0.37	3-½" = 0.50	4" = 0.65	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Syosset Landfill NY0029.008 Page 1 of 1

Site Location Syosset, NY

Site/Well No. RW 12D Coded/ Replicate No. Date 12.2.93

Weather overcast 40 Time Sampling Began 8:15 Time Sampling Completed 10:50

EVACUATION DATA

Description of Measuring Point (MP) TOC

Height of MP Above/Below Land Surface MP Elevation

Total Sounded Depth of Well Below MP 501.24 Water-Level Elevation

Held Depth to Water Below MP 118.02 Diameter of Casing

Wet Water Column in Well 383.22 Gallons Pumped/Bailed Prior to Sampling 747.27

on: 921 Gallons per Foot 0.65

off: 1026 Gallons in Well 249.09 Sampling Pump Intake Setting (feet below land surface)

Evacuation Method 4" Sub. Pump Q= 12gpm T=65 min

SAMPLING DATA/FIELD PARAMETERS

Color ~~color less~~ / ~~color less~~ / ~~color less~~ / ~~color less~~ Odor none/none/none/none Appearance clear/clear/clear/clear Temperature 13/13/14/13 °F/°C

Other (specific ion; OVA; HNU; etc.)

Specific Conductance umhos/cm 468/405/410/415 pH 5.6/5.7/5.6/5.7

Sampling Method and Material (teflon bailer w/ teflon leader)

Constituents Sampled	Container/Description From Lab X or G&M	Preservative
See COC		

Remarks

Sampling Personnel GW, DMcG

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

Laboratory Task Order No. 0617

CHAIN-OF-CUSTODY RECORD

Project Number NY 0029.008

Project Location SYOSSET NY.

Laboratory IEA MONROE

Sampler(s)/Affiliation G. WILLIAMS
D MCGREGOR

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION: 40ml VOAs UNC SZN (HCl)	1 LITER PLASTIC TOTAL METALS (HNO3)	1 LITER PLASTIC *DISSOLVED METALS (HNO3)	500ml PLASTIC *DISSOLVED METALS (HNO3)	1 LITER PLASTIC WET CHEM (UNP)	500ml PLASTIC NH3 H2SO4				TOTAL
SY-4	L	12-3-93		3	1		2	1	1				8
SY-2R				3	1		2	1	1				8
SY-2D				3	1	1		1	1				7
SY-3D				3	1		2	1	1				8
SY-3				3	1	1		1	1				7
FB-12-3-93				3	1	1							5
TB 12-3-93	↓	↓		3									3

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 46

				Seal Intact?
Relinquished by: Derek McGregor	Organization: Geraghty & Miller, Inc.	Date 12/3/93	Time 6:30 pm	(Yes) No N/A
Received by:	Organization:			
Relinquished by:	Organization:			Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: Dissolved Metals filtered through .45 um filters.
* Dissolved metals put in 2-500ml plastic bottles because of a shortage of 1000ml plastic bottles. This was done for Samples SY-4, SY-2R, and SY-3D.

Delivery Method: ☐ In Person ☐ Common Carrier _____ (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

GERAGHTY & MILLER, INC.
Environmental Services

Laboratory Task Order No. 06161

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number LI&B/Syosset Landfill NY000710078

Project Location Syosset, New York

Laboratory TEA Labs Inc.

Sampler(s)/Affiliation D. Vines, G. Williams, L. Hendricks

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	40 ml. vials VOCs SW4.2 (w/HCl)	*Dissolved Metals 1 L. Ice Plastic (u/HNO3)	1 Liter Plastic Total Metals (u/HNO3)	1 L. Ice Plastic Wet Chemistry (unp)	500 ml. Plastic Ammonia (u/H2SO4)					TOTAL
TB11193	L	11/1/93		3									3
FB11193	L	11/1/93		3	1	1	1	1					7
SY-9	L	11/1/93		3	1	1	1	1					7
SY-6d	L	11/1/93		3	1	1	1	1					7
SY-3dd	L	11/1/93		3	1	1	1	1					7

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 31

Relinquished by: [signature] Organization: Geraghty & Miller

Received by: _____ Organization: _____ Date 11/1/93 Time 1530 Seal Intact? Yes No N/A

Relinquished by: _____ Organization: _____

Received by: _____ Organization: _____ Date / / Time _____ Seal Intact? Yes No N/A

Special Instructions/Remarks:

* Dissolved Metals filtered in field through 0.45 µm filters

Delivery Method: ☐ In Person ☒ Common Carrier Federal Express (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

G&M Form 09 1-90

GERAGHTY & MILLER, INC.
Environmental Services

Laboratory Task Order No. 06161

CHAIN-OF-CUSTODY RECORD

Project Number LI/Slossel Landfill NY0029008

Project Location Slossel, Hempstead, New York

Laboratory IEA Labs INC

Sampler(s)/Affiliation D.Vines, G.Williams, L Hendricks

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	40 ml Glass Vials VOCs 5042 (HCl)	1 Liter Plastic * Dissolved Metals (HNO3)	1 Liter Plastic Total Metals Hardness (HNO3)	1 Liter Plastic Wet Chemistry (none)	500 ml Plastic Ammonia (H2SO4)					TOTAL
TB112G3	L	11/2/93		3									3
FB11293	L	11/2/93		3	1	1							5
SY-3	L	11/2/93		3	1	1	1	1					7
SY-3d	L	11/2/93		3	1	1	1	1					7
SY-4	L	11/2/93		3	1	1	1	1					7
SY-2d	L	11/2/93		3	1	1	1	1					7
SY-2R	L	11/2/93		3	1	1	1	1					7

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 43

Relinquished by: [signature] Organization: Geraghty & Miller
Received by: _____ Organization: _____ Date 11/2/93 Time 1700 Seal Intact? Yes No N/A

Relinquished by: _____ Organization: _____
Received by: _____ Organization: _____ Date / / Time _____ Seal Intact? Yes No N/A

Special Instructions/Remarks:

* Dissolved Metals field filtered through 0.45 um filters.

VOA vials have 2 drops of HCl preserved in field

Delivery Method: ☐ In Person ☒ Common Carrier Federal Express (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

G&M Form 09.1.90

GERAGHTY & MILLER, INC.
Environmental Services

Laboratory Task Order No. 06161

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number LTB Syosset Landfill NY0029908

Project Location Syosset, New York

Laboratory IEA Lab Inc.

Sampler(s)/Affiliation L. Herdrich, D. Vines, G. Williams

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION: 40 ml. glass vials Vocs 524.2 (w/ HCl)	1 liter plastic * Dissolved Metals * (w/HNO3)	1 Liter Plastic Total Metals Hardness (w/HNO3)	1 Liter Plastic (unp) Wet Chemistry	500 mL Plastic Ammonia (H2SO4)				TOTAL
* SY-1 *	L	11.3.93		9	3	3	3	3				21
RB-11S	L	11.3.93		3	1	1	1	1				7
FB-11I	L	11.3.93		3	1	1	1	1				7
FB-11d	L	11.3.93		3	1	1	1	1				7
TB113 93	L	11.3.93		3								3
FB113 93	L	11.3.93		3	1	1	*					5
REP1	L	11.3.93		3	1	1	1	1				7

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 57

Relinquished by: [signature] Organization: Geraghty & Miller, Inc
Received by: _____ Organization: _____ Date 11/3/93 Time 1615 Seal Intact? Yes No N/A

Relinquished by: _____ Organization: _____
Received by: _____ Organization: _____ Date / / Time _____ Seal Intact? Yes No N/A

Special Instructions/Remarks:
** Please use this sample for matrix spike/matrix spike duplicate **
* Dissolved METALS were field filter through 0.45 microns filters.

Delivery Method: ☐ In Person ☑ Common Carrier FEDEX (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

G&M Form 09 1-90

GERAGHTY & MILLER, INC.
Environmental Services

Laboratory Task Order No. 01616

CHAIN-OF-CUSTODY RECORD

Project Number LEB/Syosset Landfill NY0029008

Project Location Syosset, New York

Laboratory IEA Labs, Inc.

Sampler(s)/Affiliation D.Vines, G.Williams, L.Hendricks

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION: 40 ml. vials VOCs 524.2 (w/HCl)	*Dissolved Metals* 1 Liter plastic (w/HNO3)	1 Liter Plastic Total Metals (w/HNO3) Total Hardness	1 Liter Plastic Wet Chemistry (UNP)	500 ml. Plastic Ammonia (H2SO4)					TOTAL
PK-10 I	L	11.4.93		3				1					4
Rep-2	L	11.4.93		3				1					4
(*) PK-10 d (*)	L	11.4.93		9	3	3	3	3					21
PK-10S	L	11.4.93		3				1					4
SY-1d	L	11.4.93		3				1					4
TB11493	L	11.4.93		3									3
FB11493	L	11.4.93		3	1	1							5
SY-7	L	11.4.93		3				1					4
SY-8	L	11.4.93		3				1					4

Sample Code: ~~L~~ = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 53

Relinquished by: Dead Fish — Organization: Geraghty & Miller

Received by: _____ — Organization: _____ — Date 11/4/93 Time 1630 — Seal Intact? (Yes) No N/A

Relinquished by: _____ — Organization: _____

Received by: _____ — Organization: _____ — Date / / Time _____ — Seal Intact? Yes No N/A

Special Instructions/Remarks:

(*) Please use this sample for our matrix spike/matrix spike duplicate

* Dissolved metals, field filtered through 0.45 µm filters

Delivery Method: ☐ In Person ☒ Common Carrier Federal Express (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

G&M Form 09-1-90

GERAGHTY & MILLER, INC.
Environmental Services

Laboratory Task Order No. 06161

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number LI(B)Syosset Landfill NY0000606

Project Location Syosset, New York

Laboratory TEA Labs, Inc.

Sampler(s)/Affiliation D. Vinas; O. Williams; L. Hendricks

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	1 Liter Plast. * Dissolved Metals (+HNO3)	1 Liter Plastic Total Metals, Hardness (+HNO3)	1 Liter Plastic Wet Chemistry (unp.)						TOTAL
SY-1d	L	11/4/93		1	1	1						3
SY-8	L	11/4/93		1	1	1						3
Rep-2	L	11/4/93		1	1	1						3
PR-10S	L	11/4/93		1	1	1						3
PR-10I	L	11/4/93		1	1	1						3
SY-7	L	11/4/93		1	1	1						3

Sample Code: L = Liquid, S = Solid, A = Air

Total No. of Bottles/ Containers: 18

Relinquished by: [signature] Organization: Geraghty & Miller
Received by: _____ Organization: _____ Date 11/4/93 Time 1830 Seal Intact? Yes No N/A

Relinquished by: _____ Organization: _____
Received by: _____ Organization: _____ Date / / Time _____ Seal Intact? Yes No N/A

Special Instructions/Remarks: _____

Delivery Method: ☐ In Person ☑ Common Carrier Federal Express (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

G&M Form 09-1/90

GERAGHTY & MILLER, INC.
Environmental Services

Laboratory Task Order No. 06161

CHAIN-OF-CUSTODY RECORD

Project Number: LKB/Siyosa Landfill/NY0229008

Project Location: Sunset, N.Y

Laboratory: IEA Labs, Inc

Sampler(s)/Affiliation: L. Hendricks, D. Vines, G. Williams

SAMPLE BOTTLE / CONTAINER DESCRIPTION

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	40 ml glass vials VOC 524.2 (w/HCl)	1 Liter Plastic *Dissolved Metals (w/HNO3)	1 liter Plastic Total Metals Hardness (w/HNO3)	1 Liter Plastic Wet Chemistry (UNP)	500 ml. Plastic Ammonia (H_2SO_4)					TOTAL
RW-12D	L	11.5.93		3	1	1	1	1					7
RW-12I	L	11.5.93		3	1	1	1	1					7
Rep 3	L	11.5.93		3	1	1	1	1					7
FB11593	L	11.5.93		3	1	1							5
TB11593	L	11.5.93		3									3
SY-6	L	11.5.93		3	1	1	1	1					7

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 36

Relinquished by: L. Hendricks Organization: Geraghty & Miller, Inc
Received by: Organization:
Date 11/5/93 Time 1500
Seal Intact? (Yes) No N/A

Relinquished by: Organization:
Received by: Organization:
Date / / Time
Seal Intact? Yes No N/A

Special Instructions/Remarks:
*Dissolved Metals field filtered through 0.45 um filters

Delivery Method: ☐ In Person ☒ Common Carrier Federal Express (SPECIFY) ☐ Lab Courier ☐ Other ______ (SPECIFY)

G&M Form 09.1.90

APPENDIX I

ANALYTICAL RESULTS OF ANALYTE-FREE WATER SAMPLES FROM IEA LABORATORIES, INC.

APPENDIX I

ANALYTICAL RESULTS OF ANALYTE-FREE WATER SAMPLES FROM IEA LABORATORIES, INC.

IEA
An Aquarion Company

200 Monroe Turnpike
Monroe, Connecticut 06468

Phone 203·261·4458
Fax 203·268·5346

15

December 9, 1993

Mr. Vince Glasser
Geraghty & Miller
125 East Bethpage Road
Plainview, NY 11830

Dear Vince:

Attached are results for the volatile organic analysis of method blanks analyzed on 11/4/93 and 11/29/93, as well as prep blanks from the inorganics analysis performed on these dates. The the blanks were prepared from the same lots of water as those provided as field blank water for the Geraghty & Miller's sampling events at the Syosset landfill. The analysis performed on 11/4/93 corresponds with the first round of sampling and that on 11/29/93 with the second field event. In neither volatile analysis were compounds present at concentrations greater than the one ppb specified in the QA/QC requirements outlined in the method requested. The prep blanks also met the criteria of the protocols specified for the project.

Very truly yours,

Stephanie N. Plunkett
Client Services Manager

SNP:mjv

TABLE 1.0
30930- METHOD BLANK WATER

Aqueous

GERAGHTY & MILLER
MISCELLANEOUS 524.2 VOLATILE ORGANICS

All values are ug/L.

Sample Identification				
Dilution Factor	1.0		1.0	
Method Blank I.D.	VBLKG4		VBLKDB	
Compound	METHOD BLANK RUN 11/04/93		METHOD BLANK RUN 11/29/93	Quantitation Limits with no Dilution
Dichlorodifluoromethane	U		U	1
Chloromethane				1
Vinyl Chloride				1
Bromomethane				1
Chloroethane				1
Trichlorofluoromethane				1
1,1-Dichloroethene				1
Acetone				5
Carbon Disulfide				1
Methylene Chloride	0.9 J			2
trans-1,2-Dichloroethene	U			1
1,1-Dichloroethane				1
2-Butanone				5
cis-1,2-Dichloroethene				1
Chloroform	0.7 J		0.3 J	1
1,1,1-Trichloroethane	U		U	1
Carbon Tetrachloride				1
Benzene				1
1,2-Dichloroethane				1
Trichloroethene				1
1,2-Dichloropropane				1
Bromodichloromethane				1
2-Chloroethyl vinyl ether				1
cis-1,3-Dichloropropene				1
4-Methyl-2-Pentanone				5
Toluene	0.1 J			1
trans-1,3-Dichloropropene	U			1
1,1,2-Trichloroethane				1
Tetrachloroethene				1
2-Hexanone				5
Dibromochloromethane				1
Chlorobenzene				1
Ethylbenzene				1
m&p-Xylene				1
o-Xylene				1
Styrene				1
Bromoform				1
1,1,2,2-Tetrachloroethane				1

U - See Appendix for definition.
Note: Sample detection limit = quantitation limit x dilution factor.

IEA
200 Monroe Turnpike
Monroe, CT 06468 (203) 452-8200

METAL RESULTS - WATER

JOB # : 11/4/93

all results in ug/L

Lab Sample ID :	PBW				
Client ID :					

PARAMETER						MDL
Aluminum	37.0 U					200
Antimony	21.0 U					60
Arsenic	1.0 U					10
Barium	2.0 U					200
Beryllium	1.0 U					5
Boron	100.0 U					100
Cadmium	2.0 U					10
Calcium	15.0 U					1000
Chromium	3.0 U					10
Cobalt	3.0 U					50
Copper	7.0 U					25
Iron	87.0 U					100
Lead	2.0 U					3
Magnesium	18.0 U					1000
Manganese	2.0 U					15
Mercury	0.2 U					0.2
Molybdenum						10
Nickel	11.0 U					40
Potassium	473.0 U					1000
Selenium	2.0 U					5
Silicon						100
Silver	2.0 U					10
Sodium	121.0 U					1000
Thallium	1.0 U					10
Tin						30
Titanium						4
Vanadium	16.0 U					50
Zinc	4.0 U					20

11/29/93

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	37.0	U	37.0	U	37.0	U	37.0	U	37.000	U	P
Antimony	21.0	U	21.0	U	21.0	U	21.0	U	21.000	U	P
Arsenic	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	F
Barium	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Cadmium	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Calcium	15.0	U	15.0	U	15.0	U	15.0	U	19.750	B	P
Chromium	3.0	U	3.0	U	3.0	U	3.0	U	3.280	B	P
Cobalt	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Copper	7.0	U	7.0	U	7.0	U	7.0	U	7.350	B	P
Iron	87.0	U	~~87.0+75.1~~	U	87.0	U	87.0	U	87.000	U	P
Lead	2.0	U	0K 2.0	U	2.0	U			2.000	U	F
Magnesium	21.2	B	12/7/93 21.2	B	25.3	B	19.6	B	18.000	U	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.200	U	CV
Nickel	11.0	U	11.0	U	11.0	U	11.0	U	11.000	U	P
Potassium	473.0	U	-533.0	B	473.0	U	473.0	U	473.000	U	P
Selenium	2.0	U	2.0	U	2.0	U			2.000	U	F
Silver	-3.1	B	-2.3	B	2.0	U	2.0	U	2.000	U	P
Sodium	121.0	U	121.0	U	121.0	U	121.0	U	121.000	U	P
Thallium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	F
Vanadium	16.0	U	16.0	U	16.0	U	16.0	U	16.000	U	P
Zinc	4.0	U	4.0	U	4.0	U	4.0	U	6.760	B	P
Cyanide											NR
Boron	100.0	U	100.0	U					100.000	U	P

QUANT REPORT

Operator ID: MANAGER
Output File: ^G8521::QT
Data File: >G8521::G3
Name: ;;;VBLKG4
Misc: VBLKG4 HP5995G;;;LLW;DF1 ;G2206

Quant Rev: 6 Quant Time: 931104 13:28
Injected at: 931104 12:59
Dilution Factor: 1.00000

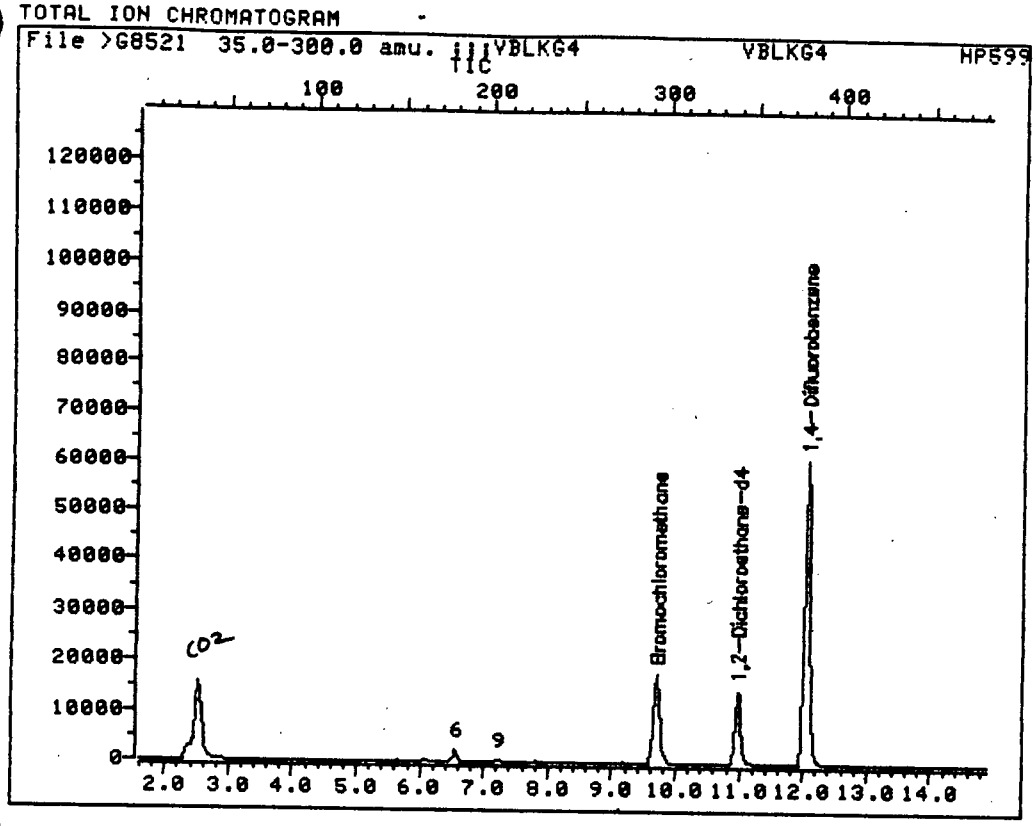
ID File: I_CDM::N2
Title: IFB
Last Calibration: 931104 12:43

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.70	127.8	11696	10.00	ug/L	81
6)	Methylene Chloride	6.55	83.8	3424	.92	ug/L	94
9)	Methyl tert-Butyl Ether	7.21	72.8	1492	.52	ug/L	92
14)	Chloroform	9.78	82.8	4838^	.71	ug/L	98
16)	1,2-Dichloroethane-d4	10.97	64.8	35670	11.36	ug/L	91
17)	*1,4-Difluorobenzene	12.05	113.8	147235	10.00	ug/L	98
31)	*Chlorobenzene-d5	19.16	116.8	101892	10.00	ug/L	88
36)	Toluene	15.75	91.8	1164	.11	ug/L	91
37)	Toluene-d8	15.59	97.8	171395	10.29	ug/L	94
43)	Bromofluorobenzene	21.56	173.9	42707	9.92	ug/L	98

* Compound is ISTD

11/4/93

TOTAL ION CHROMATOGRAM



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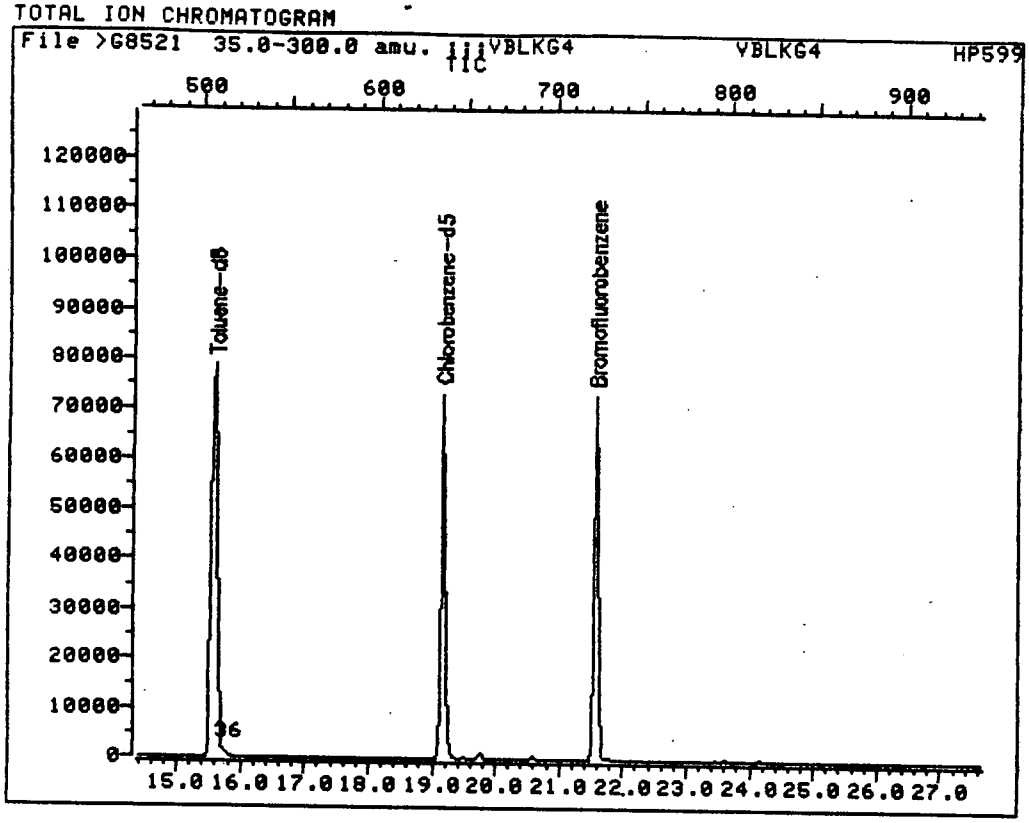
Name: ;;;VBLKG4
Misc: VBLKG4 HP5995G;;;LLW;DF1 ;G2206

Id File: I_COM::N2
Title: IFB
Last Calibration: 931104 12:43

Operator ID: MANAGER
Quant Time: 931104 13:28
Injected at: 931104 12:59

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



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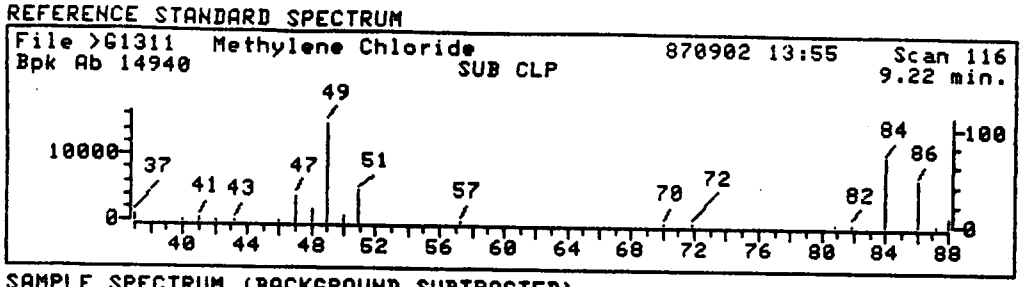
Name: ;;;VBLKG4
Misc: VBLKG4 HP5995G;;;LLW;DF1 ;G2206

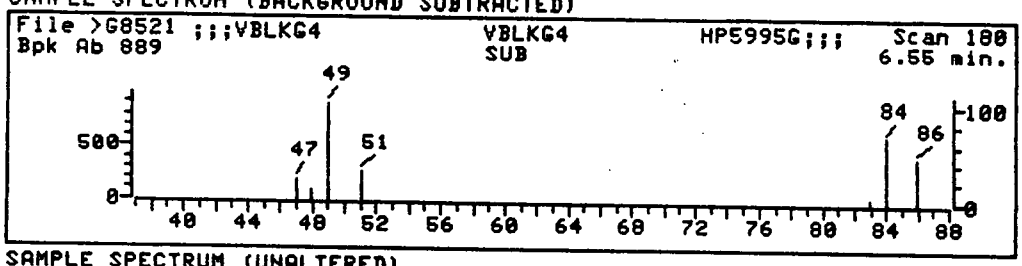
Id File: I_CDM::N2
Title: IFB
Last Calibration: 931104 12:43

Operator ID: MANAGER
Quant Time: 931104 13:28
Injected at: 931104 12:59

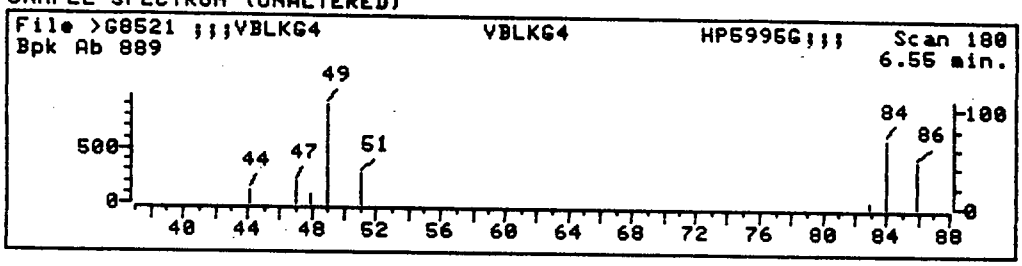
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



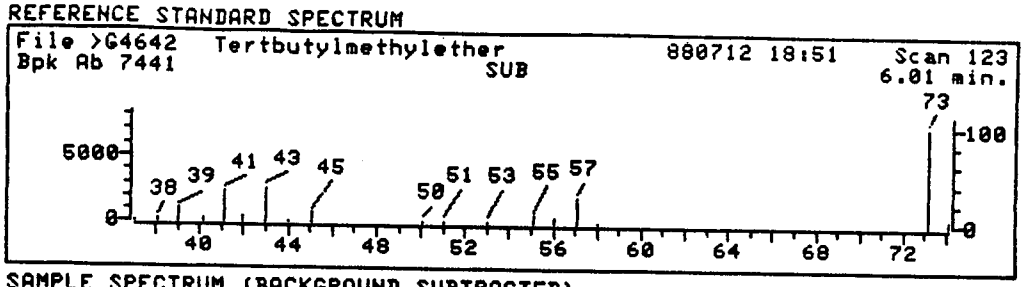
SAMPLE SPECTRUM (UNALTERED)



Data File: >G8521::G3 Quant Output File: ^G8521::QT
Name: ;;;VBLKG4
Misc: VBLKG4 HP5995G;;;LLW;DF1 ;G2206
Quant Time: 931104 13:28 Quant ID File: I_CDM::N2
Injected at: 931104 12:59 Last Calibration: 931104 12:43

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 180
Retention Time: 6.55 min.
Quant Ion: 83.8
Area: 3424
Concentration: .92 ug/L
q-value: 94

REFERENCE STANDARD SPECTRUM



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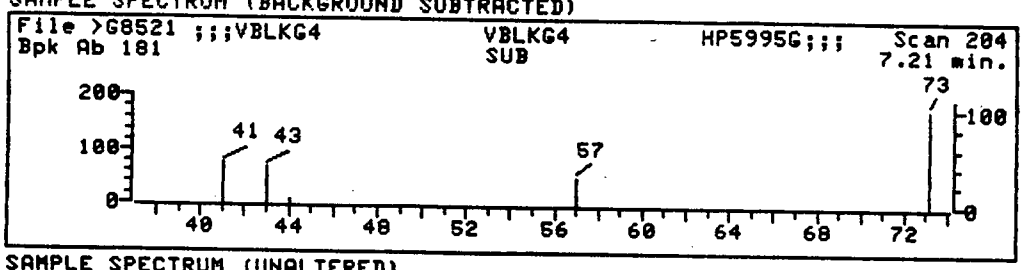

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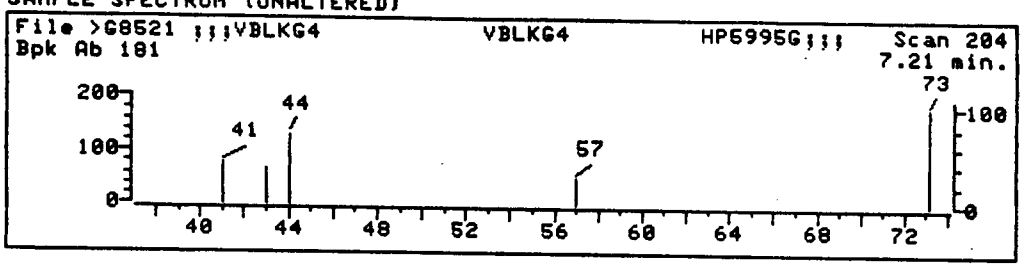
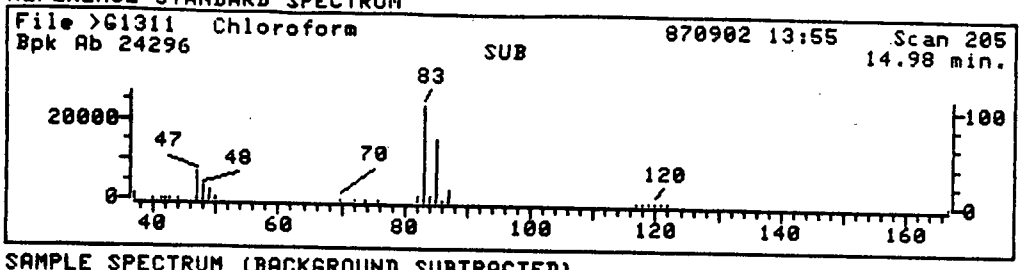


Data File: >G8521::G3 Quant Output File: ^G8521::QT
Name: ;;;VBLKG4
Misc: VBLKG4 HP5995G;;;LLW;DF1 ;G2206
Quant Time: 931104 13:28 Quant ID File: I_CDM::N2
Injected at: 931104 12:59 Last Calibration: 931104 12:43

Compound No: 9
Compound Name: Methyl tert-Butyl Ether
Scan Number: 204
Retention Time: 7.21 min.
Quant Ion: 72.8
Area: 1492
Concentration: .52 ug/L
q-value: 92

REFERENCE STANDARD SPECTRUM



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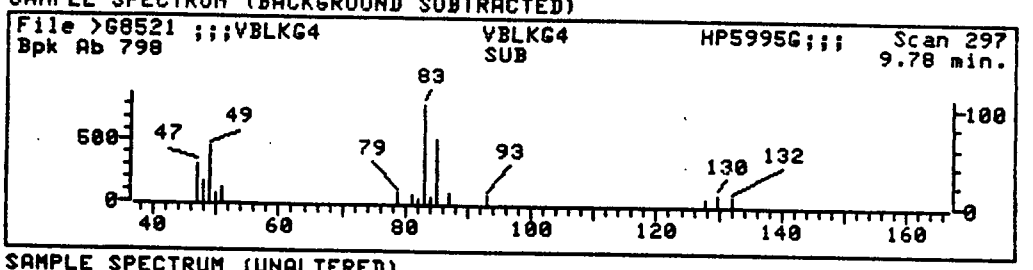

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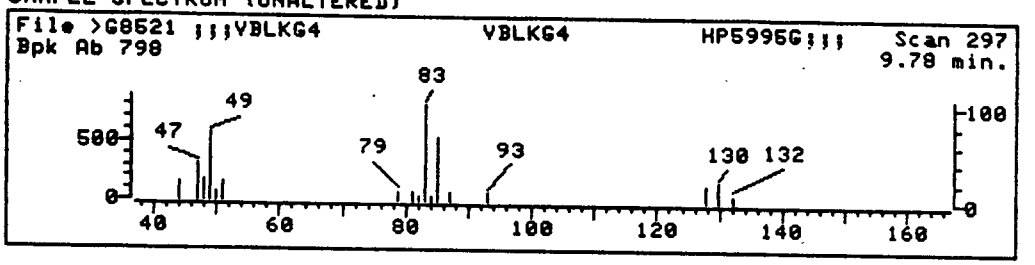

Data File: >G8521::G3 Quant Output File: ^G8521::QT
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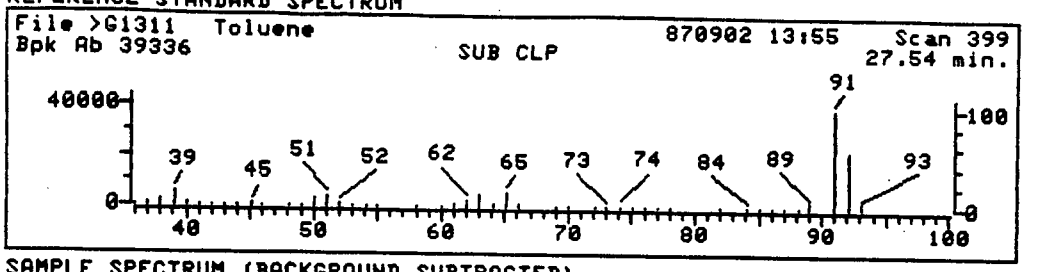
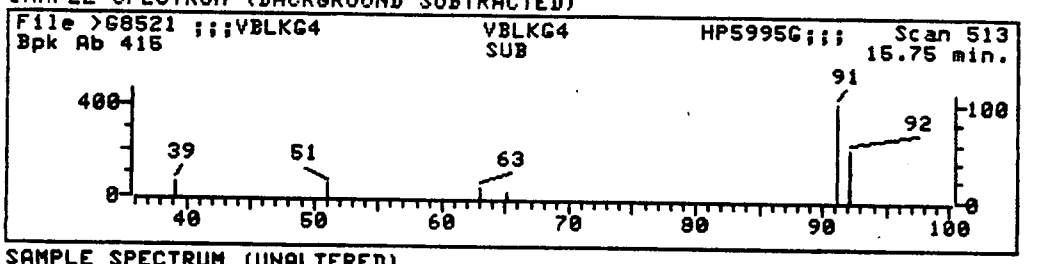
Misc: VBLKG4 HP5995G;;;LLW;DF1 ;G2206
Quant Time: 931104 13:28 Quant ID File: I_CDM::N2
Injected at: 931104 12:59 Last Calibration: 931104 12:43

Compound No: 14
Compound Name: Chloroform
Scan Number: 297
Retention Time: 9.78 min.
Quant Ion: 82.8
Area: 4838^
Concentration: .71 ug/L
q-value: 98

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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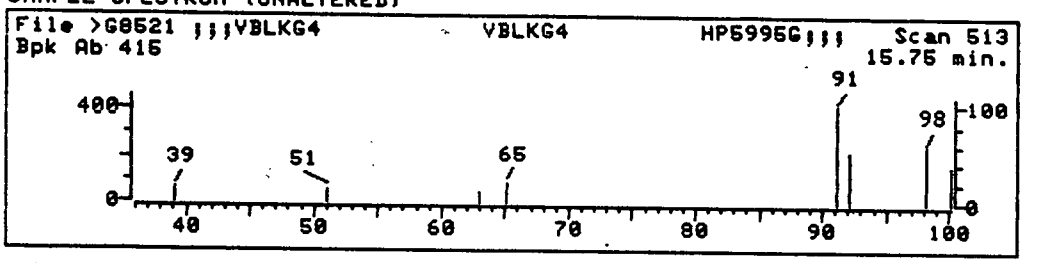

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Misc: VBLKG4 HP5995G;;;LLW;DF1 ;G2206
Quant Time: 931104 13:28 Quant ID File: I_CDM::N2
Injected at: 931104 12:59 Last Calibration: 931104 12:43

Compound No: 36
Compound Name: Toluene
Scan Number: 513
Retention Time: 15.75 min.
Quant Ion: 91.8
Area: 1164
Concentration: .11 ug/L
q-value: 91

Quantitation Report

Data File : I:\HPCHEM\MSD\D0201.D
Acq Time : 29 Nov 93 10:01 am
Sample : VBLKDB
Misc : VBLKDB D0019
Quant Time: Dec 2 15:30 1993

Operator: L.Decker
Inst : HP5972D
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\IEA524.M
Title : 524.2 Purgable Organics
Last Update : Thu Dec 02 10:31:41 1993
Response via : Single Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) fluorobenzene	10.23	96	222330	5.00	ug/L	0.00
System Monitoring Compounds						%Recovery
41) 4-bromofluorobenzene	19.86	95	103571	6.34	ug/L	126.76%
55) 1,2-dichlorobenzene-d4	22.01	152	54259	6.50	ug/L	130.09%
Target Compounds						Qvalue
15) chloroform	8.46	83	6744	0.26	ug/L	99

LHD
12/02/93

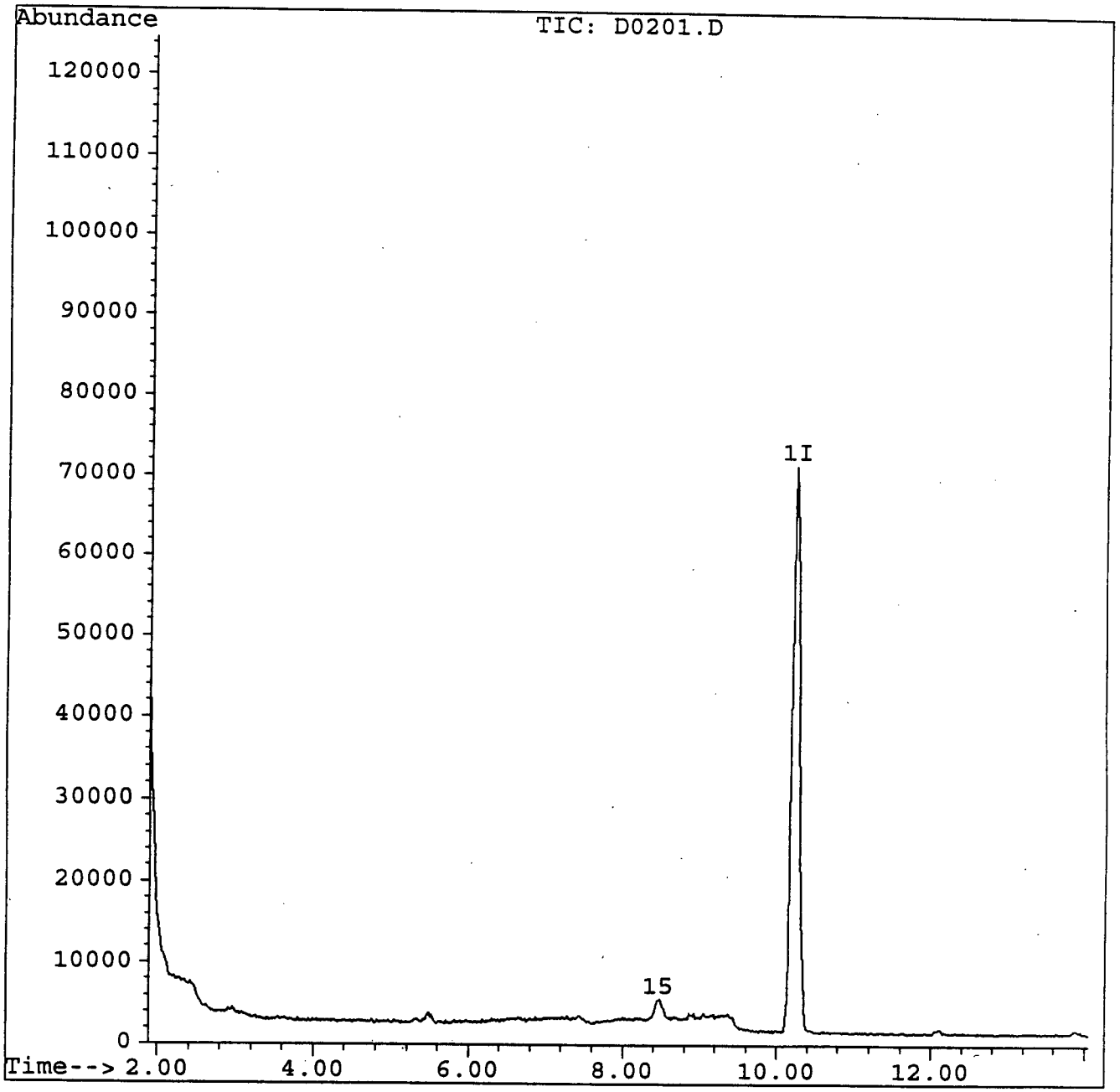
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : I:\HPCHEM\MSD\D0201.D
Acq Time : 29 Nov 93 10:01 am
Sample : VBLKDB
Misc : VBLKDB D0019
Quant Time: Dec 2 15:30 1993

Operator: L.Decker
Inst : HP5972D
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\IEA524.M
Title : 524.2 Purgable Organics
Last Update : Thu Dec 02 10:31:41 1993
Response via : Single Level Calibration

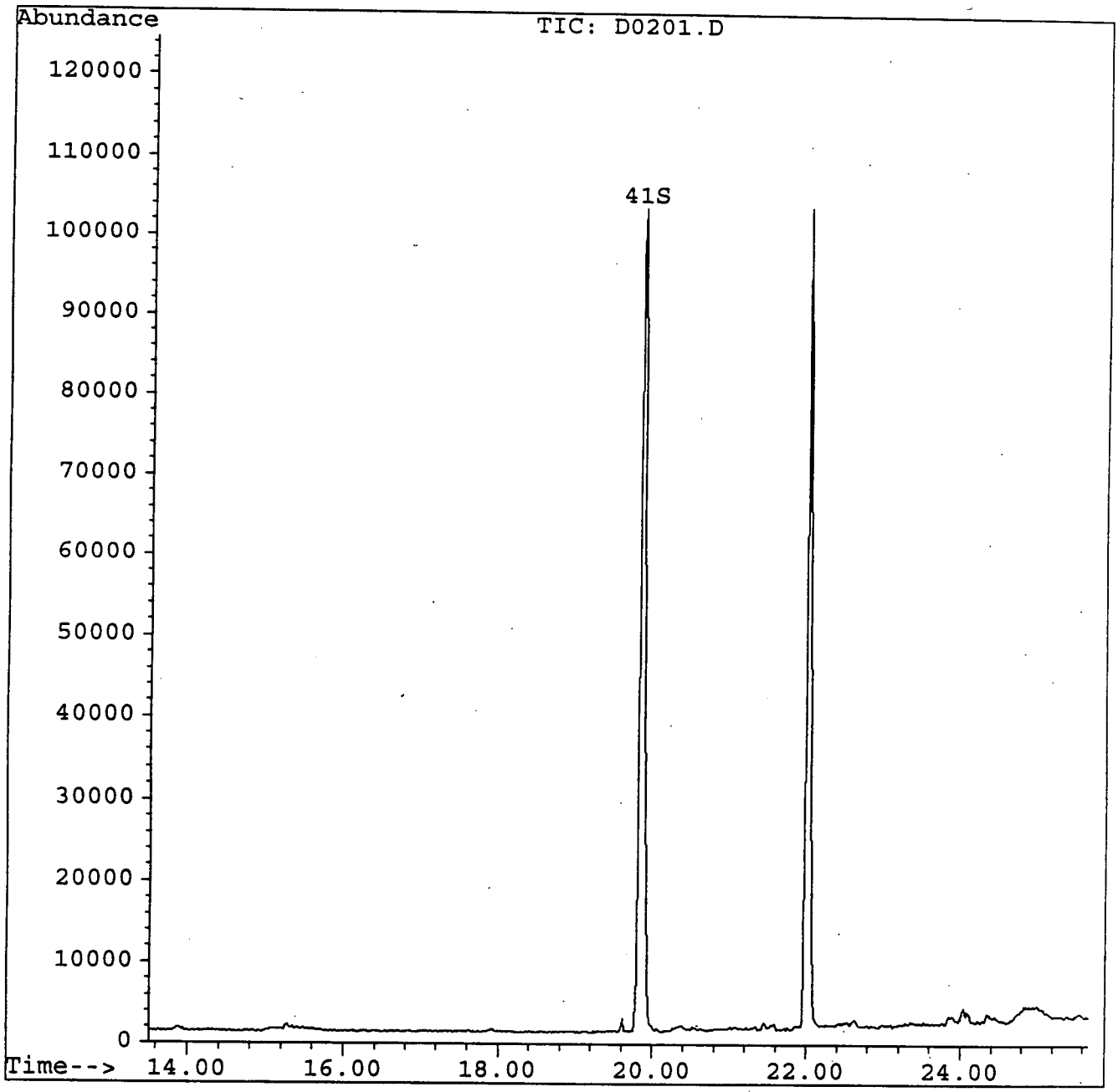


Quantitation Report

Data File : I:\HPCHEM\MSD\D0201.D
Acq Time : 29 Nov 93 10:01 am
Sample : VBLKDB
Misc : VBLKDB D0019
Quant Time: Dec 2 15:30 1993

Operator: L.Decker
Inst : HP5972D
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\IEA524.M
Title : 524.2 Purgable Organics
Last Update : Thu Dec 02 10:31:41 1993
Response via : Single Level Calibration



APPENDIX J

GAS WELL CONSTRUCTION LOGS

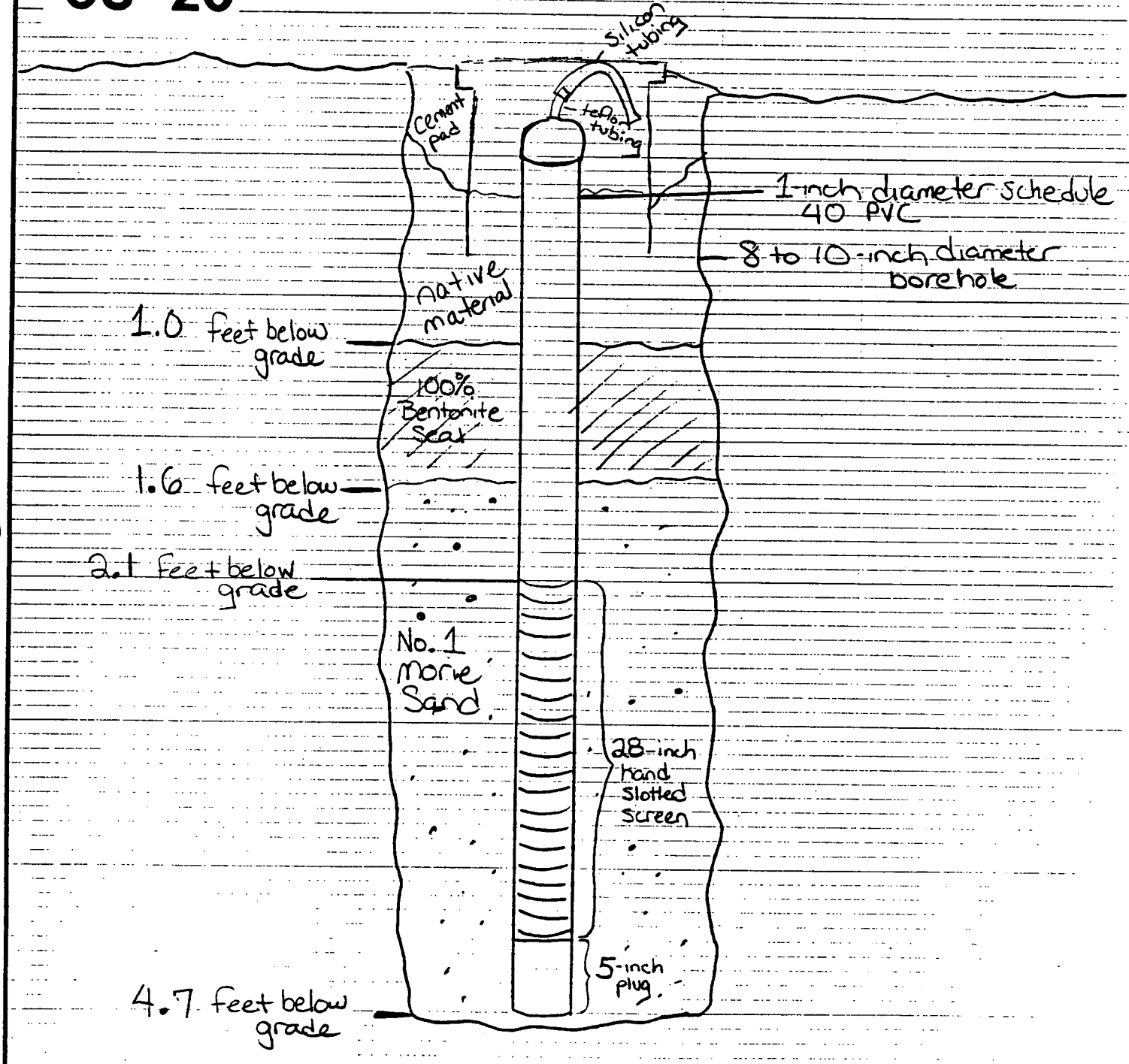
GERAGHTY & MILLER, INC.
Environmental Services

SUBJECT: GAS MONITORING WELLS
PROJECT: LKB- Syosset Landfill
CLIENT/PROJECT: NO: N40029008

BY: S. Zaggy DATE: 9/30/93
CHKD: DATE:
REV: DATE:

PAGE: 1
SHEET: 1

CS-20



NOTE: Each well was secured with an 8-inch diameter, flush-mounted steel manhole and cover, cemented in place.

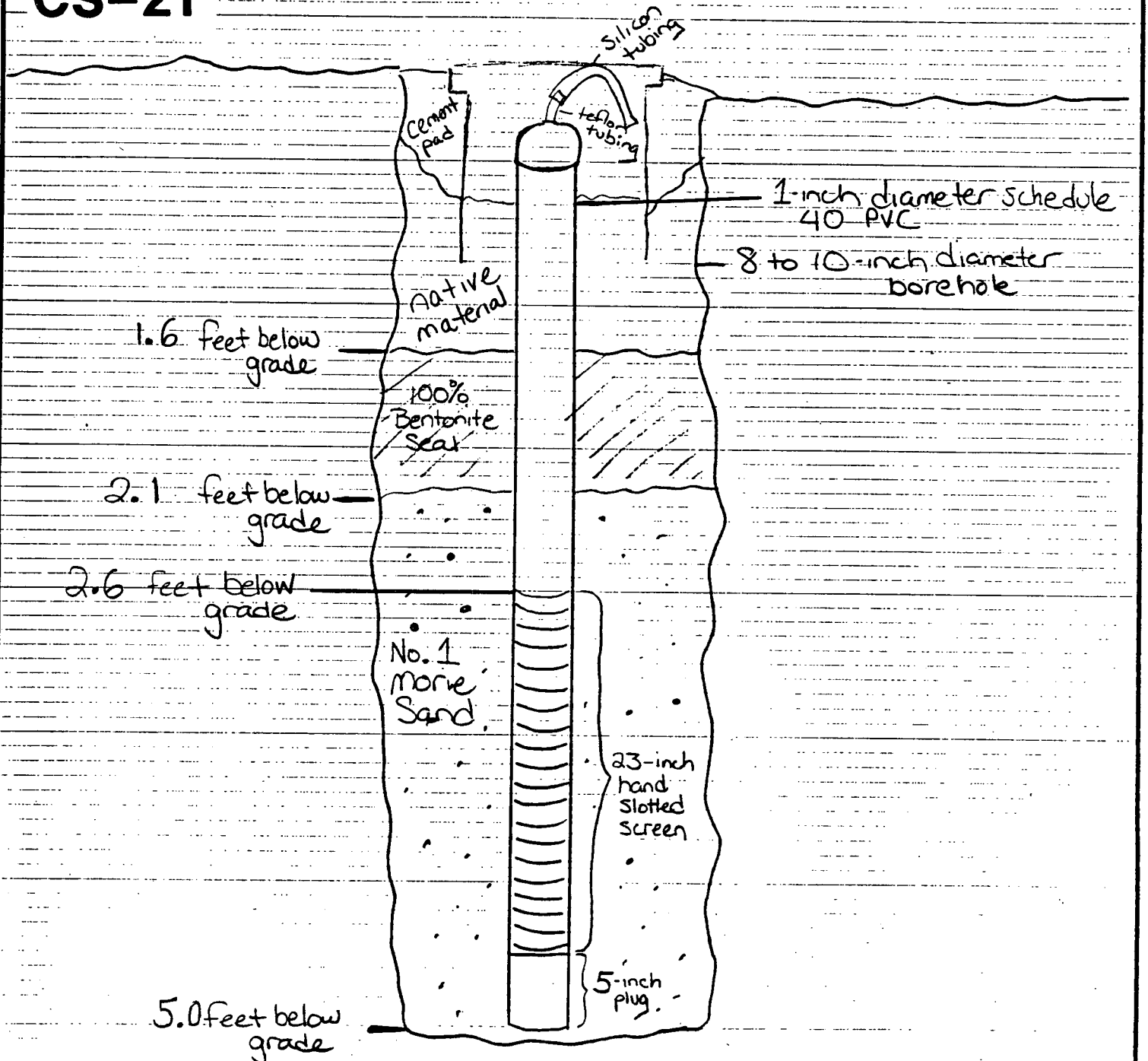
GERAGHTY & MILLER, INC.
Environmental Services

SUBJECT: GAS MONITORING WELLS
PROJECT: LKB- Syosset Landfill
CLIENT/PROJECT: NO: N40029008

BY: S. Zaggi DATE: 9/30/93
CHKD: DATE:
REV: DATE:

PAGE 1
SHEET 1

CS-21



NOTE: Each well was secured with an 8-inch diameter, flush-mounted steel man hole and cover, cemented in place.

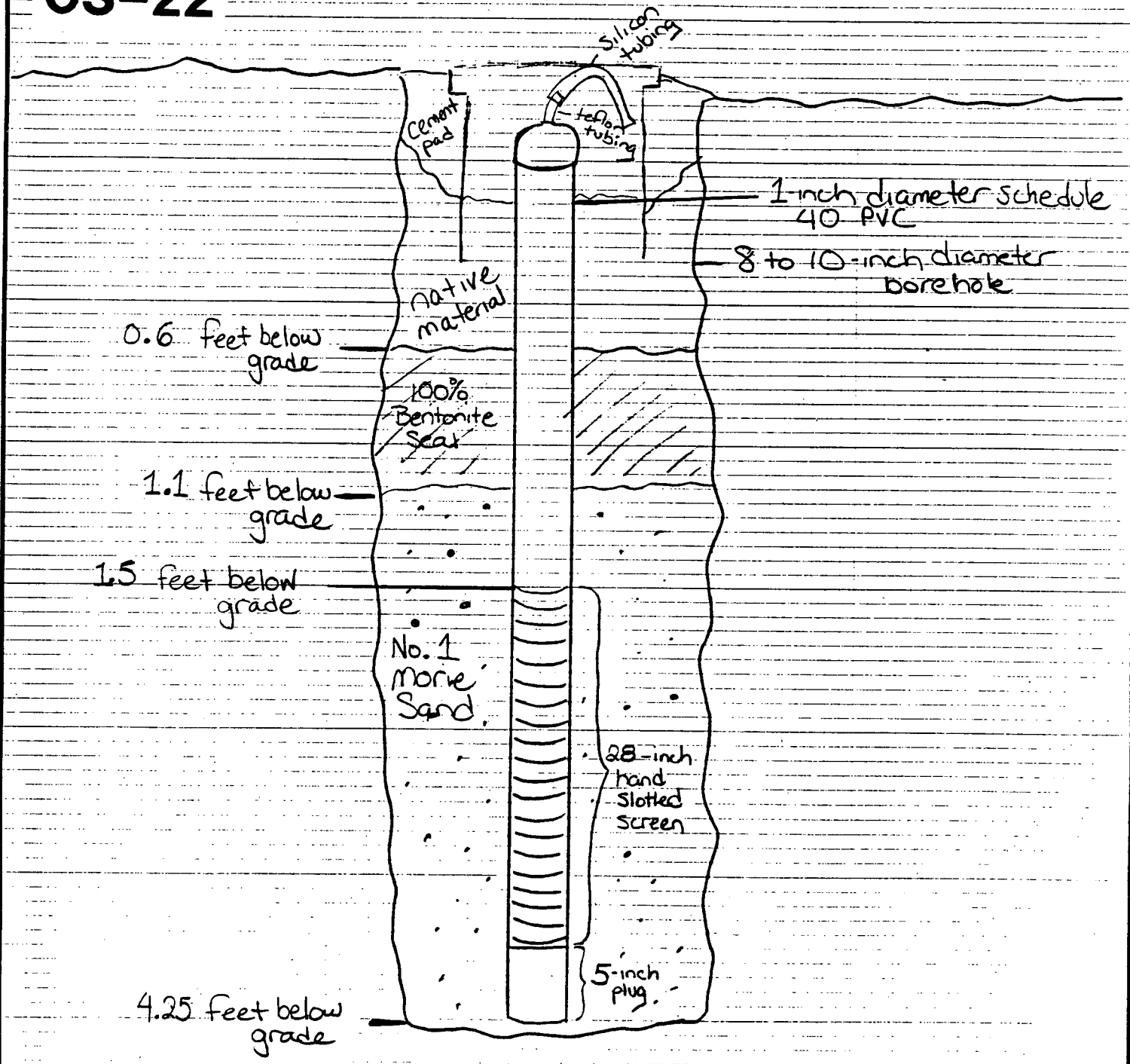
GERAGHTY & MILLER, INC.
Environmental Services

SUBJECT: GAS MONITORING WELLS
PROJECT: LKB- Syosset Landfill
CLIENT/PROJECT: NO: NY0029008

BY: S. Zoggia DATE: 9/30/93
CHKD: DATE:
REV: DATE:

PAGE 1
SHEET 1

CS-22



NOTE: Each well was secured with an 8-inch diameter, flush-mounted steel man hole and cover, cemented in place.

APPENDIX K

MEMORANDUM FROM LOCKWOOD, KESSLER & BARTLETT, INC. REGARDING THE INSTALLATION AND MONITORING OF ON-SITE SUBSURFACE GAS MONITORING WELLS AS PART OF THE FIRST OPERABLE UNIT REMEDIAL DESIGN PROGRAM

APPENDIX K
ON-SITE SUBSURFACE GAS MONITORING

PERFORMED BY
LOCKWOOD, KESSLER & BARTLETT, INC.
AS PART OF THE
FIRST OPERABLE UNIT
REMEDIAL DESIGN FOR THE SYOSSET LANDFILL

PURPOSE

The Syosset Landfill Second Operable Unit (OU2) Remedial Investigation (RI) Work Plan called for the installation of five new on-site gas monitoring cluster wells along the site's northeastern property line. These wells were installed and monitored during the First Operable Unit (OU1) Remedial Design Program. The following paragraphs discuss the monitoring well installation, well construction, gas monitoring protocols and sampling results.

GAS WELL INSTALLATION AND CONSTRUCTION

The five on-site gas monitoring cluster wells (CW-4 through CW-8), having monitoring depths of 15 and 35 feet below grade, were installed as part of the soil boring program for the OU1 Remedial Design in accordance with the requirements of the OU1 Remedial Design Work Plan (LKB, 1991). The wells were installed from September 16-21, 1992 by Soil Mechanics Drilling Corp. under the supervision of LKB and Malcolm Pirnie (USEPA oversight consultant for the OU1 Remedial Design).

The cluster well locations are shown on Figure K-1. Cluster well CW-4 was installed along the property line adjacent to the homes at the northern end of Abby Lane. Wells CW-5 and CW-6 were located at the property line in the vicinity of the South Grove Elementary School Building and the South Grove School Annex, respectively. Wells CW-7 and CW-8 were installed at the property line near the homes on Colony Lane and adjacent to existing gas monitoring wells G-14 and G-13, respectively. Locating wells CW-7 and CW-8 in this manner provided well clusters consisting of three wells each at those two locations with monitoring depths of 5', 10' and 35'. The installation of these five cluster wells along the northeastern property line supplemented the three existing cluster wells (CW-1, 2 and 3) located in the vicinity of the site's gas venting trench. Cluster wells CW-1, 2 and 3 have monitoring depths of 6', 11' and 35' each. These eight cluster wells provide gas monitoring points throughout the site's northeastern boundary.

Cluster wells CW-4 through CW-8 were constructed by using the hollow stem auger method to drill a 10-inch diameter borehole to a depth of 35 feet. Two 2-inch diameter PVC monitoring wells were installed within each borehole at depths of 15 and 35 feet below grade. Each monitoring well contained a five foot length of PVC well screen. The annular space around each

screen length was filled with gravel packing and the wells were separated with a two foot deep section of bentonite slurry. The remaining borehole annulus was filled with backfill material. The well head assembly consisted of a PVC cap, reducer fitting and a 1/2 inch diameter PVC ball valve as shown on Figure K-1. The wells were completed at grade with a flush mount frame and cover set in two feet of concrete centered around each cluster well.

The OU2 RI Work Plan called for monitoring the five additional cluster wells along with existing well CW-2 on two occasions of falling barometric pressure. Following the first sampling round conducted on January 21, 1993, the Town requested permission from the USEPA to install three additional five foot deep monitoring wells at cluster well locations CW-4, 5 and 6 to provide additional information at shallow depths. The Town received USEPA approval to install the wells on August 23, 1993 and the wells were installed by LKB on October 22, 1993. The wells were constructed similar to the proposed off-site gas monitoring wells. LKB drilled an eight inch borehole using a gas powered, hand held auger supplemented by a manual sand auger. A five foot deep, 1 inch diameter PVC gas monitoring well was installed in the borehole. Each well contained a screen length of four feet. The borehole annulus around the screen was backfilled with gravel packing material with a bentonite slurry seal above the screened zone extending to the land surface. The wells were completed approximately three feet above grade with a PVC cap.

GAS MONITORING PROTOCOLS

Wells CW-2, 4, 5, 6, 7, and 8 were sampled for TCL-VOCs and methane on January 21, 1993 and December 3, 1993 by LKB. VOC samples were obtained following the protocols in the OU1 Remedial Design Work Plan using laboratory traps and sampling pumps to collect 250 ml sample volumes. QA/QC procedures outlined in the OU1 Remedial Design Work Plan were followed, including performing one duplicate sample during each monitoring event. The individual TCL-VOCs were analyzed by EcoTest, Inc. using a gas chromatograph. The second round of VOC samples was rejected due to laboratory contamination of the sampling apparatus. The second round was repeated on April 15, 1994. The samples are currently being analyzed by the laboratory. Methane was also monitored at each cluster well using a combustible gas indicator.

SAMPLING RESULTS

The results of the first round of gas monitoring at the on-site cluster wells are summarized in Table K-1. Since there are no current air quality standards for VOC's in ambient air, the sampling results were compared to the current New York State (NYS) Air Guide 1 Annual Guideline Concentrations (AGC) for ambient air. In general, TCL-VOCs were not detected or detected in low concentrations (below the AGC) on-site with the following exceptions. Methylene Chloride was found in several of the cluster wells at concentrations ranging from 12 to 100 ug/m^3. However, this compound was also found in the field blank at 24 ug/m^3 and is known as a common laboratory contaminant. Chloroform was found in wells CW-2 (6' & 35'), CW-4 (15' & 35'), and CW-7 (15') at concentrations from 24 to 52 ug/m^3. Tetrachloroethene was detected in wells CW-4 (15' & 35') and CW-7 (35') at concentrations between 10 and 68 ug/m^3.

Chlorobenzene was found in wells CW-4 (15' & 35') and CW-5 (35') at concentrations between 48 and >200 ug/m^3 (exceeded the upper quantification limit). The upper quantification limit was exceeded because the sample trap became saturated with the compound before the fixed volume of sample (250 ml) was fully collected. This problem was rectified by the laboratory during the second round of samples, however the data collected in that round was rejected due to laboratory contamination of the sampling apparatus. The upper quantification limit above the respective AGC levels was also exceeded for other compounds including chloromethane (CW-5, 35'); carbon disulfide (CW-5, 35'); vinyl acetate (CW-4, 35'; CW-5, 35'); m+p xylene (CW-4, 35'; CW-5, 35'); total xylenes (CW-4, 35'; CW-5, 35', CW-8, 35'; CW-8, 35' DUP). For some other compounds detected, the AGC value was greater than the upper quantification limit. Therefore, excursion of the guideline value is unable to be determined.

Methane was detected in only four of the eighteen wells sampled, ranging in concentrations from 1.4 % in well CW-8 (35') to 10.0 % in wells CW-4 (35') and CW-5 (35').

TABLE K-1

SYOSSET LANDFILL

CLUSTER WELL GAS SAMPLING RESULTS – 1/21/93

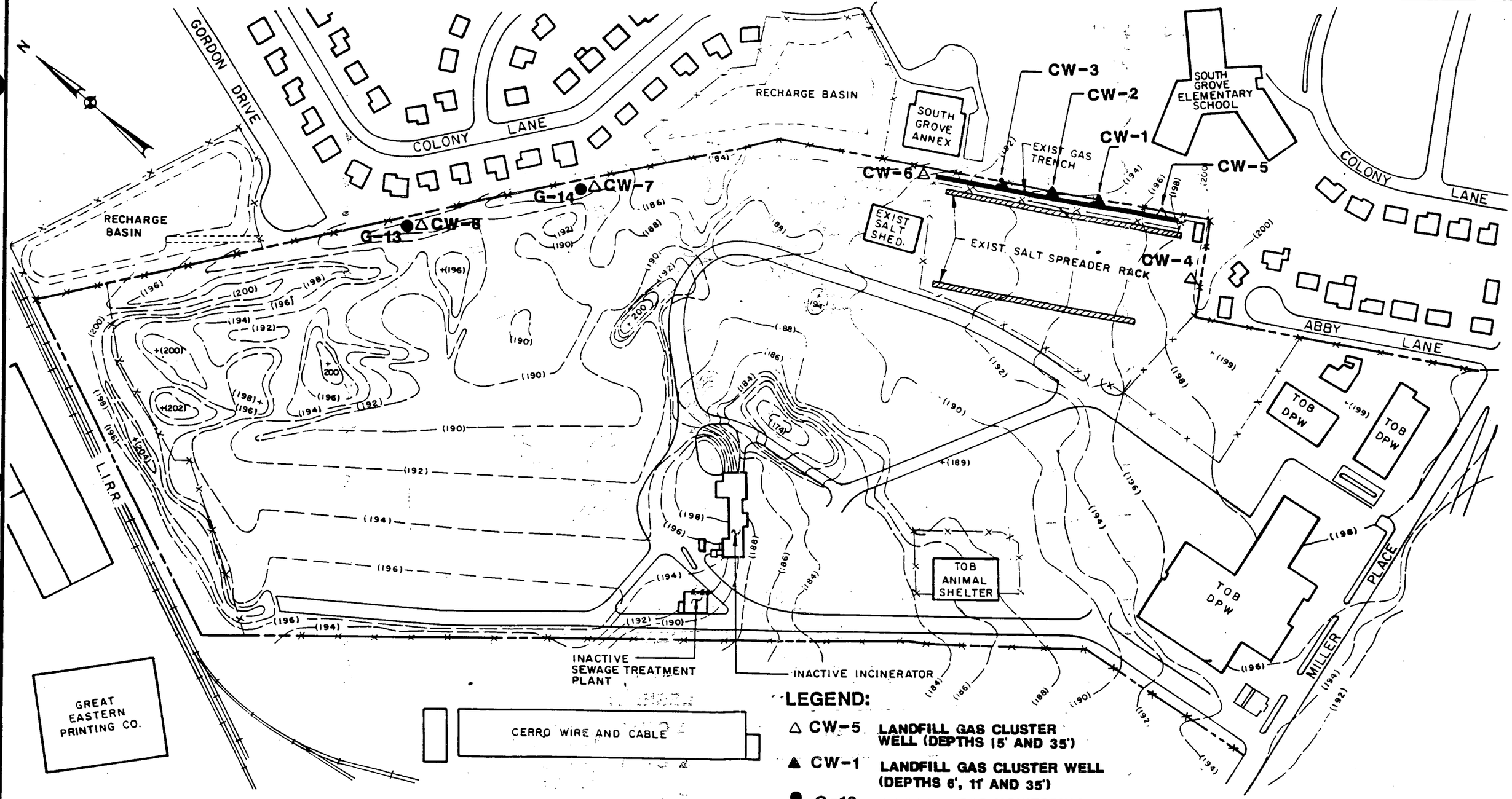
	WELL NUMBER AND RESULTS (UG/M3)																	GUIDELINES	
	CW-2	CW-2	CW-2	CW-4	CW-4	CW-5	CW-5	CW-6	CW-6	G-14	CW-7	CW-7	G-13	CW-8	CW-8	CW-8	FIELD	NYS Air Guide 1	
COMPOUND	(6')	(11')	(35')	(15')	(35')	(15')	(35')	(15')	(35')	(5')	(15')	(35')	(5')	(15')	(35')	35' DUP	BLANK	SGC	AGC
Chloromethane	–	–	–	–	–	–	>200	–	16	–	–	–	72	68	–	36	–	22,000	770
Bromomethane	–	–	–	–	–	–	–	–	–	–	12	–	–	–	–	–	–	4,524 (I)	45 (I)
Vinyl Chloride	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
Chloroethane	–	–	–	20	–	–	–	–	–	–	–	–	–	–	–	–	–	630,000	63,000
Methylene Chloride	60	–	100	56	12	76	44	80	12	76	76	40	–	76	36	72	24	41,000	27
Acetone	–	–	–	>200	–	–	–	–	–	–	–	–	80	68	>200	>200	–	140,000	14,000
Carbon Disulfide	–	–	–	–	–	–	>200	–	–	–	–	–	–	–	–	–	–	710	7
1,1 Dichloroethene	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
1,1 Dichloroethane	–	–	–	–	20	–	12	–	–	–	–	–	–	–	–	–	–	190,000	500
1,2 Dichloroethene	–	–	–	–	16	–	–	–	–	–	–	–	–	–	–	–	–	190,000	1,900
Chloroform	28	–	28	24	52	20	12	16	–	20	40	–	–	–	–	–	–	980	23
1,2 Dichloroethane	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
2-Butanone	–	–	–	–	–	–	–	–	–	–	–	–	–	–	110	120	–	140,000	300
111 Trichloroethane	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
Carbon Tetrachloride	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
Vinyl Acetate	–	–	–	–	>200	–	>200	–	–	–	–	–	–	–	–	–	–	8,333 (I)	83 (I)
Bromodichloromethane	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
1,2 Dichloropropane	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
t 13 Dichloropropene	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
Trichloroethylene	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
Chlorodibromomethane	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
112 Trichloroethane	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
c 13 Dichloropropene	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
Bromoform	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
2-Hexanone	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
4-Methyl-2-Pentanone	–	–	–	–	–	–	–	–	–	–	–	–	–	–	40	20	–	48,000	480
1122 Tetrachloroethane	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
Tetrachloroethene	–	–	–	68	10	–	–	–	–	–	–	10	–	–	–	–	–	81,000	0.075
Chlorobenzene	–	–	–	48	>200	–	>200	–	–	–	–	–	–	–	–	–	–	11,000	20
Benzene	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
Toluene	–	–	–	28	76	–	>200	–	–	–	–	–	–	–	80	60	–	89,000	2,000
Ethyl Benzene	–	–	–	190	>200	–	>200	–	–	–	–	–	–	–	60	60	–	100,000	1,000
Styrene	–	–	–	>200	>200	–	>200	–	–	–	–	–	–	–	180	200	–	51,000	510
o Xylene	–	–	–	–	>200	–	>200	–	–	–	–	–	–	–	>200	>200	–	100,000	700
m + p Xylene	40	–	–	170	>400	–	>400	–	–	–	32	–	10	–	120	110	–	100,000	300
Xylene	40	–	–	170	>600	–	>600	–	–	–	32	–	10	–	>300	>300	–	100,000	300
Methane (% gas)	–	–	–	4.5	10.0	–	10.0	–	–	–	–	–	–	–	1.4	1.4	–		

– = Not Detected

(I) = Assumed Interim Value

SGC = Short-term Guideline Concentrations

AGC = Annual Guideline Concentrations



LEGEND:

- △ CW-5 — LANDFILL GAS CLUSTER WELL (DEPTHS 15' AND 35')
- ▲ CW-1 — LANDFILL GAS CLUSTER WELL (DEPTHS 6', 11' AND 35')
- ● G-13 — LANDFILL GAS MONITORING WELL (DEPTH 5')

PREPARED BY	LOCKWOOD, KESSLER & BARTLETT, INC. CONSULTING ENGINEERS SINCE 1889 SYOSSET, NEW YORK
CLIENT	TOWN OF OYSTER BAY DEPARTMENT OF PUBLIC WORKS SYOSSET, NEW YORK
PROJECT TITLE	SYOSSET LANDFILL SECOND OPERABLE UNIT REMEDIAL INVESTIGATION
TITLE	ON-SITE LANDFILL GAS CLUSTER WELL LOCATIONS
DESIGN BY	TH
DRAWN BY	GC
CHECKED BY	TH
DATE	JUNE 1991
SCALE	1"=200'

FIGURE K-1

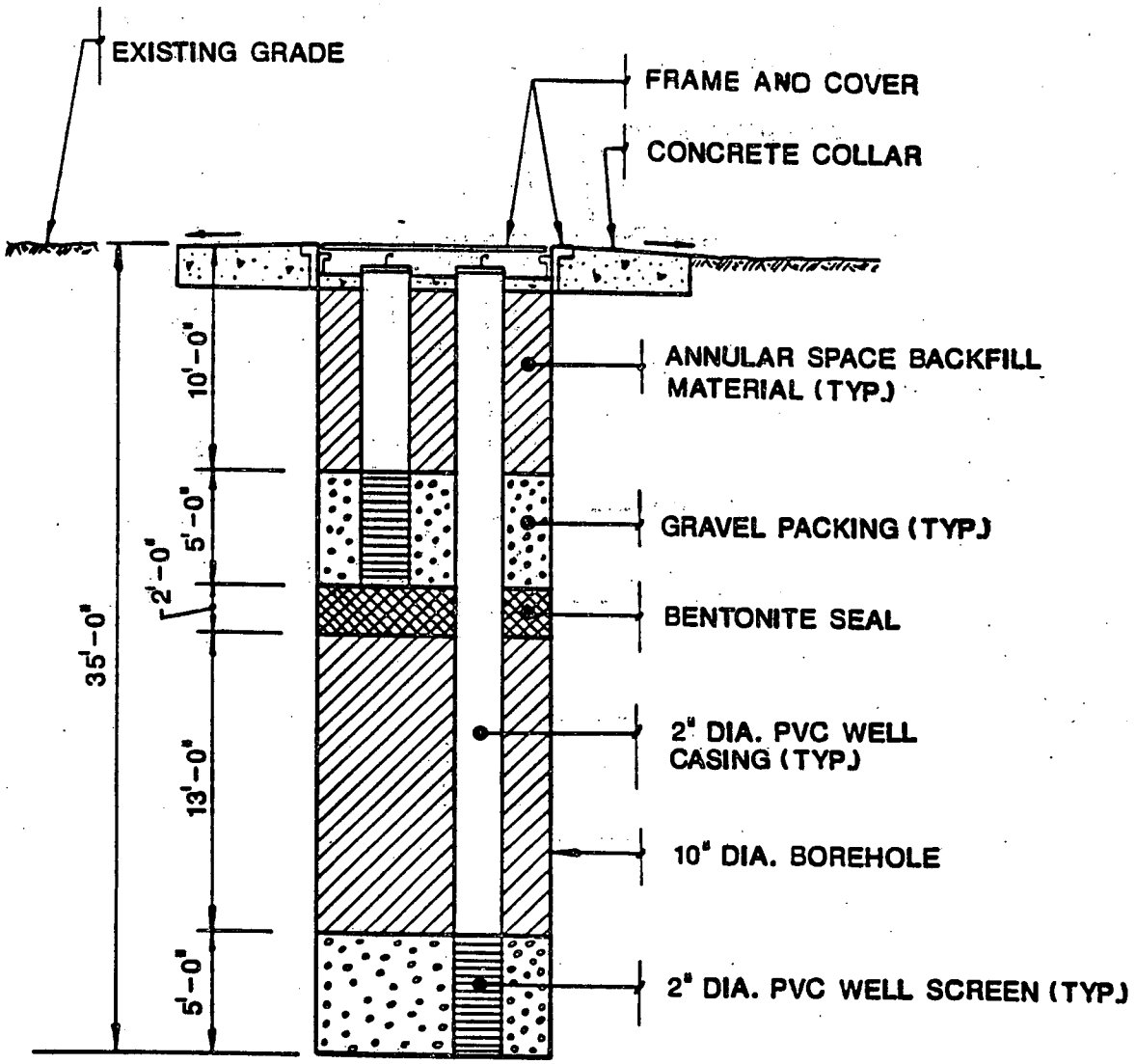


FIGURE K-2

TYPICAL LANDFILL GAS CLUSTER WELL